A Comparative Study of Hospital Management in Great Britain and Brazil: Cost Information Use

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Thesis Summary

In Great Britain and Brazil healthcare is free at the point of delivery and based only on citizenship. However, the British NHS is fifty-five years old and has undergone extensive reforms. The Brazilian SUS is barely fifteen years old.

This research investigated the middle management mediation role within hospitals comparing managerial planning and control using cost information in Great Britain and Brazil. This investigation was conducted in two stages entailing quantitative and qualitative techniques. The first stage was a survey involving managers of 26 NHS Trusts in Great Britain and 22 public hospitals in Brazil. The second stage consisted of interviews, 10 in Great Britain and 22 in Brazil, conducted in four selected hospitals, two in each country.

This research builds on the literature by investigating the interaction of contingency theory and modes of governance in a cross-national study in terms of public hospitals. It further builds on the existing literature by measuring managerial dimensions related to cost information usefulness.

The project unveils the practice involved in planning and control processes. It highlights important elements such as the use of predictive models and uncertainty reduction when planning. It uncovers the different mechanisms employed on control processes. It also depicts that planning and control within British hospitals are structured procedures and guided by overall goals. In contrast, planning and control processes in Brazilian hospitals are accidental, involving more *ad hoc* actions and a profusion of goals. The clinicians in British hospitals have been integrated into the management hierarchy. Their use of cost information in planning and control processes reflects this integration. However, in Brazil, clinicians have been shown to operate more independently and make little use of cost information but the potential signalled for cost information use is seen to be even greater than that of their British counterparts.

Key words: Managerial Planning, Managerial Control, Managerial Factors, Cost Information Usefulness, Managerial Decision-Making

To my wife Elida,

and my children Francisco Mateus and Jade.

To my brother Roberth.

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Chapter 1 - Introduction

This thesis has its origin in the author's interest in the phenomenon of hospital management and the public health sector. The interest to investigate hospital management in the context of the public health sector was stirred by the perceived and rising difficulties of hospitals to successfully ensure the supply of their services and products to the population.

Hospitals are situated in a complex environment and they are becoming more complex to manage. There is no acceptable condition of absolute certainty, environmental stability and predictability of human behaviour. Therefore, centralised decision-making can be expected to have implications such as intolerable delays.

Hospitals are large and diverse organisations because they have to provide an extensive range of services and products. These services are considerably diverse and/or dynamic. A hospital 'is', also, a restaurant, hotel, laundry, pharmacy, laboratory, etc. In this case centralised decision-making is unacceptable and the multidivisional structure emerges. Consequently, in this case, the control, communication and co-ordination diminish and opportunistic behaviour rises. Non-programmed decision-making will emerge exactly because of the uncertainty and the complexity and diversity of organisational activities. The greater the environmental uncertainty the organisation is exposed to, the more non-programmed decisions will be necessary. Also, the presence of at least two internal professional groups: clinical and managerial or administrative, for example, should be considered an added element that contributes to the complexity.

Emmanuel et al. (1993, p. 15) stated that "in programmed decisions the means-end relationships involved are sufficiently well understood for instructions to be confidently given as to how tasks should be carried out in order to achieve a given objective". These authors posed that "a non-programmed decision is one that has to rely upon the judgement of managers because there is no formal mechanism available for predicting likely outcomes". This subject will be addressed with more depth in Chapter 5.

Therefore, the emergence of more non-programmed decision in a multidivisional structure requires more judgement, intuition and skills of lower managers. These elements demand that alternatives – more social, collectivist – to the technical-rational approach should be presented

and discussed. It is tolerable that managers in unitary organisations can be little involved with planning and other feed forward control activities but in multidivisional organisations, they are required to participate in planning and control to a much greater extent.

This study investigates whether the planning and control functions exercised by intermediate level managers have, at least in part, been applied to solve or cut across that complexity. This study approaches the focused phenomenon in two countries: Great Britain and Brazil. There is one main reason and two further ones for this choice. The main reason is because the British and the Brazilian health systems have the same objective, i.e. free health at the point of delivery based on citizenship. Thus both countries place emphasis on public funding. The first further reason can be considered the difference of age between both systems, the British health system is long established and the Brazilian one is in its infancy. The second further reason is the governmental lines of action in both countries, i.e. the direct involvement in Great Britain and indirect involvement in Brazil. Lessons may be transferable from the British system to Brazil. The British system has been long-established and has adopted different organisational approaches but it is still based on similar principles.

Objectives of the research

In broad terms, planning and control functions are concerned with the successful future of an organisation. It is largely known that these functions are highly complex because of the multitude of variables and perspectives implicated. They also involve environmental analyses and can find different application at a number of organisational levels. This complexity applied in hospitals promotes a fascinating area of study. It consists of a difficult area however, because the concepts are neither exactly clear nor their boundaries, i.e. where they start or finish.

This study sets out to explore this issue in detail by gaining an in-depth understanding of planning and control within hospitals. To make the study coherent and adequate in both British and Brazilian environments, it focuses on the intermediate level managers undertaking planning and control and using a particular product of accounting systems, i.e. cost information. Top managers are more concerned with mutable strategic policies. In turn, operational staff is more concentrated in daily routine operations. Intermediate level managers fill the gap between strategic intent and operational reality, which is a vital attribution in

public hospitals. The hospital middle managers performing planning and control have been little researched in Great Britain and even less so in Brazil.

Traditional accounting techniques are fully applied for programmed decision-making – one does not have any problem showing this. But they can be fully applied, or represented, in non-programmed decision-making as well, this extends their applicability to hospitals.

In the complexity of the multidivisional structure, the accounting information system will help to prevent managers from trying self-interested internal and personal participation, for example, when manipulating forecasts. At the same time it will reduce the scope for co-ordination and communication mistakes. It also helps to ensure that internal transactions are conducted efficiently and, consequently, minimises transaction costs.

The focal point of accounting systems, however, is the general organisation rather than transaction cost. In the case of absence of a common and agreed objective or goal, the accounting system should promote managerial behaviour congruence, i.e. an agreed set of actions. The issue is that behavioural congruence is accepted and defended rather than goal congruence for hospitals, such as profit maximisation for private organisations. Behavioural congruence is understood as being able to restrain some opportunistic behaviour that emerges in the case of transactional inefficiencies. The idea of behavioural congruence is related with the contention of opportunistic behaviour leading to the 'satisfactory' rather than to the optimal solution.

To the same extent, accounting systems are able to reproduce and carry essential elements of social interaction – which also serves to mediate opportunistic behaviour – such as coercion and power. They are also able to reduce distance between managers, levels, areas and organisations. One has to highlight the fact that in a multidivisional structure, it is more difficult to effectively curb (or analyse) opportunistic, self-interested behaviour.

Therefore, lessons can be drawn from public health policy and hospital management in both countries. The belief that differences in context of different countries are crucial and, therefore, nothing can be learned is understood to be a fallacy. Differences in contexts will affect managerial perceptions, which is the idea of contingency theory. It enhances, or not, the use of cost information. Also, Brazilian managers present strong barriers between groups such

as clinicians and administrators. In Great Britain, due to a longer existence of the British health system policies the barriers may have been broken or overcome to some extent.

Research question

Because hospitals are complex organisations, middle managers are expected to exercise more detailed planning and control. They are self-interested, and have personal goals. They face non-programmed decision-making and problem solving and it is accepted that they act in the expected way to answer environmental complexity. They use cost information to perform planning and control.

The Research Question:

Do intermediate level hospital managers in Great Britain use cost information more effectively for planning and control than their counterparts in the hospitals in Brazil?

Considering both countries:

1. *What is the general profile of the public hospital managers? What can be said about their experience, sector and time in charge? (Discussed in Chapter 7.2.1)*

2. *How do they consider their decisional roles? What can be said about their goal congruence when performing planning and control processes? (Discussed in Chapter 7.2.2)*

3. *Do they consider the available cost information relevant? To what extent? How accessible is it? (Discussed in Chapter 7.2.3)*

4. *Are they effectively involved in decision-making and problem solving, in terms of non-programmed decisions and problems? What is the hierarchical influence on the non-programmed decision-making? (Discussed in Chapter 7.2.4)*

5. *Do they use cost information when planning and controlling in terms of human resources, supplies and equipment? To what extent? Do they consider cost information useful for benchmarking and improving organizational functions? Is there complex rationality identifiable? (Discussed in Chapter 7.2.5)*

6. *Do they plan effectively? To what extent do they do it? Do they use different predictive models? Do they consider cost information useful to support the planning process? (Discussed in Chapter 7.2.6)*

7. *Do they control effectively? Do they consider cost information useful to support the control process? How do they consider control mechanisms and forms of control? (Discussed in Chapter 7.2.7)*

8. *Do managers perform planning and control differently? Do clinician managers and administrative managers perform planning and control differently? (Discussed in Chapter 7.3)*

Going further, working hypotheses were developed and tested. They are presented in Chapter 6 and their tests and results are shown in Chapter 8 together with extracts of interviews seeking to help interpreting, clarifying and illustrating the quantitative findings. The research question uses the term effectively, in the sense of being capable of being used for a purpose i.e. the third definition given by Webster's Dictionary. This definition fits well with contingency theory and complex rationality as discussed in this thesis.

It is possible that the British managers use cost information more to decide on suitable courses of action than their counterparts in Brazil, because they are more involved with accounting systems and it was determined by government policies. They are, also, more exposed to accounting mechanisms and have been for longer than Brazilian managers.

Subject of the research

The interest in researching planning and control in the specific context of the public hospitals is grounded in the public organisation's characteristics.

This research seeks to study the use of cost information in planning and control, this involves decision-making/problem solving due to the affinity of these managerial exercises. This study has its 'locus' of investigation as being the intermediate level of management in public general acute hospitals. It is a comparative study between the perception and 'modus

operandi' of the public hospital middle managers in Great Britain and their counterparts in Brazil.

Within the hospitals the middle managers will be responsible for transforming general policies into actions and these actions will influence policy making. Moreover, they are responsible for keeping and sharing the pragmatic aspects and knowledge of the work done. They are responsible for filling the gap between strategies and practice at the same time that they have to cope with different structures of governance and consequent variety of objectives, 'means' and 'ends'. Put simply, talking in terms of public acute general hospitals in Brazil, the top-level managers do not take sufficient note of them. They show themselves involved with overall policies and more long-term decisions and moreover these are determined and taken by the central government rather than the local top-level management. It is not different in Great Britain, despite the internal market. The top-management has played a more important role than their Brazilian counterparts but they did not address these responsibilities as posed to the middle managers.

Contributions of the research

This thesis provides a substantial contribution to the theory investigating the impact of environmental factors and modes of governance in planning and control processes within public hospitals. Contingency theory and modes of governance must be considered simultaneously to understand the middle management mediation role when considering the effects of influences such as governmental policies, opportunism and bounded rationality in planning and control processes.

This study identifies planning and control processes as different managerial functions though interrelated. It breaks the traditional management control into planning and control within hospitals' intermediate level management. In so doing, a further contribution is the revision of the operational control definition in terms of public hospitals.

Another significant contribution is the originality of the study in investigating the use of cost information involving rationality and complex rationality and as a driver of congruent managerial behaviour within hospitals. It will therefore generate a new perspective of the managerial role in the investigated countries.

Another contribution emerges from the fact that the cross-national study of planning and control within hospitals based on the use of cost information is unknown in the two countries. Respecting this, there are original perspectives and interpretation being built using the outcomes of this research, e.g. whether the cost information is perceived as able to support managerial and clinical improvement in public hospitals.

A further three contributions can be identified in this research. First, it presents the initial development of a scale capable of being used by other researchers. The research instrument is tested and may provide a resource for future researches in this area.

Second, a new perspective is provided when exploring the managerial behaviour through managers' perceptions. And, third, a collection of generalizable findings and conclusion are provided. This is given by one of the main characteristics of this study, i.e. a sample survey seeking to characterize the managerial population.

Outline of thesis

This introduction has provided a preliminary view of the whole thesis and it contains, in general terms, essential elements and explanations of how the thesis evolved. The Figure 1.1 below provides an overall view of the thesis.

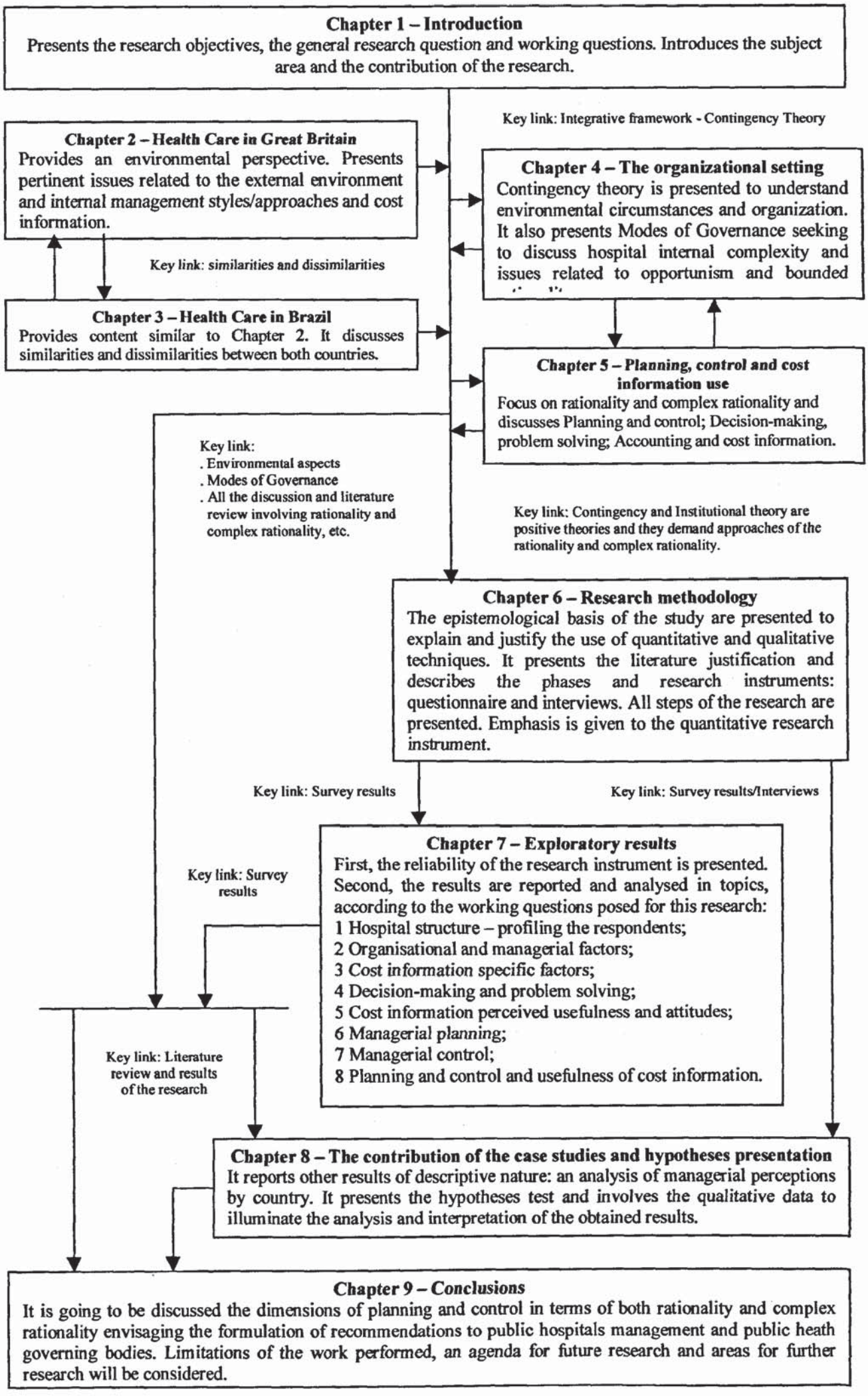
This thesis is divided into nine chapters, in addition to ten appendices plus references. Chapters 2 and 3 set out the context or external environment of the research study. These chapters present a review of the health sector, in Great Britain and Brazil respectively. Chapter 4 contains the theoretical shell under which it is possible to embrace and understand the investigated phenomenon in both countries. Chapter 5 deepens the literature focus on theoretical frameworks related to the planning and control processes using cost information within public hospitals.

Chapter 6 displays the research methodology. It gives the epistemological and technical bases, which justify the use of quantitative and qualitative techniques. It describes the technical approach, which is largely drawn from quantitative methods but does not discard the use of qualitative techniques. It includes hypotheses, sample selection, data collection, data analysis

and presents forms of interpretation. It also presents the validity of the sample measures and the research instruments. The fieldwork outlined in Chapter 6 was conducted in two stages, each divided into two phases. The first stage took place in Great Britain and the first phase consisted of a survey, which involved 26 NHS Trusts and a sample of 150 middle managers with different backgrounds, i.e. clinical and not clinical. The second phase consisted of the selection of two hospitals and the interview of 10 middle managers. Managers responsible for human resources, supplies/consumables and equipment were targeted for interview as much as possible. The second stage, immediately after the first stage, repeated the same phases in Brazil, i.e. the first phase consisted of a survey, which involved 22 public SUS hospitals and a sample of 150 middle managers. The second phase also included the selection of two hospitals and the interview of 22 middle managers.

Chapter 7 reports the preliminary results of the investigation in methodological terms. The results are presented and discussed accordingly to the research questions. In Chapter 8 the contribution of the case studies is added and hypotheses' tests are presented and analysed. Chapter 9 draws conclusions, which are discussed under the light of the presented theory. Once the results are reached there is an attempt to develop an understanding of public hospital planning and control undertaken by middle management. Finally, an agenda for future research is developed using the shortcomings of this work as a baseline.

Figure 1.1 – Thesis overall view



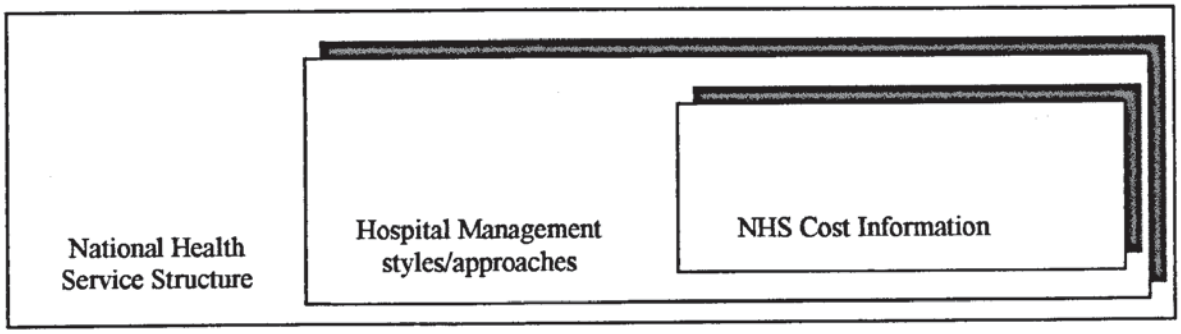
Chapter 2 – Understanding the healthcare system in Great Britain

External policies in Great Britain and Brazil may have influenced managerial behaviour and, consequently planning and control within public hospitals. Also, hospital location and managerial circumstances reflect the past. This chapter presents the National Health Service (NHS) in Great Britain.

NHS structure has undergone modifications since its implementation in 1948. Among them, the 1991 reforms, introduced by the Conservative Government (1979 – 1997), certainly represented a considerable re-organisation of the service.

The NHS is still facing transformations under the Labour Government (1997 onwards) with the White Paper The New NHS. This time, some modifications, e.g. the split between purchaser and provider, introduced by the preceding Conservative Government, were kept. Simultaneously, further proposals were introduced or modified, e.g. comparative performance measurement.

Figure 2.1 – General view of the chapter



The section will deal firstly with the historical evolution of the NHS focusing initially on its structure. Secondly, as emerging from this environment, the hospital management style and some aspects of internal management philosophy will be discussed. Finally, issues of finance and cost information through the NHS will be presented, see Figure 2.1.

2.1 National Health Service structure

The historical evolution of the NHS can be presented in three main periods: 2.1.1. Years preceding the Internal Market, 1948 – 1991; 2.1.2 Years of the Internal Market, 1991 – 1997; and 2.1.3. Years of the The New NHS, 1997 onwards.

2.1.1 Years preceding the Internal Market, 1948 - 1991

Historical antecedents in health services shaped the administrative structure of the NHS when it was implemented. It was much more a product of the interaction between forces of the health policy community in the preceding years than a result of profound studies (Ham, 1999). Since this time, the NHS has undergone modifications but its fundamental objectives have remained the same: "universal coverage and equity of access according to need" (Le Grand et al., 1998, p.1).

The NHS initial structure is understood as being based in a vertical tripartite scheme. It was organised as:

1. General practitioner services, (family doctors grouped with dentists, opticians and pharmacists) were administered by executive councils.
2. Services including maternity and child welfare clinics, health visitors, midwives, health education, vaccination and immunisation and also, ambulance services under the responsibility of local authorities.
3. Hospitals administered through Regional Hospital Boards, Boards of Governors and Hospital Management Committees.

There was centralised direction and top-down course of action and financial allocation system. Since its inception the NHS has been funded mainly from general taxation. The Ministry of Health appointed the Regional Hospital Boards that appointed the Hospital Management Committees. Financial resources followed the same path.

When the NHS was set up, a fundamental assumption was that the level of illness among British people would decline due to the provision of health services. This decline would then, in turn, enable the State to lower its expenditure on health significantly because of the declining number of illnesses. However, the opposite occurred and even supplementary

funding was necessary. Ham (1999) showed that there was no significant evidence of extravagances or inefficiency in the NHS and that the cost of the NHS had even "fallen from 3.75 per cent in 1949-50 to 3.25 per cent in 1953-54" (Op. cit., p.14) in terms of proportion of the GNP.

In the 1960s, it was realised that more financial resources should be allocated to the NHS, mainly for new buildings. The model of the District General Hospital emerged as a type of hospital of 600 up to 800 beds providing complete care for a population of 100,000 to 150,000 people. Several of these hospitals were built and already existing hospitals were upgraded to comply with District General Hospital standards. Thus, British hospitals became to be standardised in physical terms and, also, in terms of distribution.

The grouping of hospitals and a centralised direction in the form of the Hospital Management Committees under Regional Hospital boards contributed to reduce some administrative shortcomings such as regional shortages of resources and overlaps. This was achieved through implementing regional planning perspectives. Other recognised advantages of the national hospital service were the increase in the number of medical staff, services of hospital consultants were available more widely, and the introduction of a salaried service for hospital doctors with national salary scales and conditions of service. This provided a fair distribution of staff. This scheme operated for almost 26 years.

Due to increasing complaints about services provided and money spent, the NHS underwent a large organisational change in 1974 (Levitt et al., 1995):

- Regional Health Authorities superseded Regional Hospital Boards. Members of Regional Health Authorities were appointed by the Secretary of State for Social Services, responsible for the planning of health services.
- Under Regional Health Authorities, ninety Area Health Authorities in England were established. After the 1974 reform, their members were appointed by Regional Health Authorities, local authorities and by members of nursing and non-medical staff. The Secretary of State appointed the Area Health Authorities' chairmen.
- Each Area Health Authority had, alongside it, a Family Practitioner Committee.
- The Health Authority and the Family Practitioner Committee still obtained their funding from the Department of Health and Social Security. Most areas were divided

into health districts and were administered by District Management Teams that represented the bottom tier of the system.

- At the district level, Community Health Councils were set up, with the objective to represent the public to Health Authorities.

Despite the advances in hospital distribution and management, desired effects, such as the improvement of management efficiency and performance were not achieved. What happened instead was criticism about delays in decision-making, about the difficulty of relationships between managerial levels and the acknowledged widespread feeling of the existence of too many tiers and administrators (Levitt et al., 1995).

The core objective of the 1974 reorganisation was improved planning. This was sought to be necessary due to the inability of the tripartite service to provide services that match the needs of the community. The tripartite system was seen as independent arms without links, therefore an overlap of some services had occurred without providing other ones. Areas had the explicit duty of providing plans to districts, whereas districts in turn would be more concerned with daily routines. However, these intentions proved unrealistic. Levitt et al. (1995, p.21) noted:

> "the difference over planning between Area and Districts developed into the difference between theoretical assumptions of need, based on an analysis of statistics together with the views of professional advisers on the one hand, and practical proposals for improvements based on daily experience on the other".

In Patients First, a consultative paper produced in 1979, the Conservative Government agreed that one tier should be abolished. It was proposed that District Health Authorities should combine areas and districts. This resulted in 192 District Health Authorities in England. The range of management of District Health Authorities varied considerable, from the district as a whole to just a single hospital. The amount of money spent on management in the NHS fell from 5.12 % of the total budget in 1979-80 to 4.44 % in 1982-83 (Ham, 1999). The Family Practitioners Committees were separated from the mainstream of NHS administration on 1st April 1985.

The policy between 1948 and 1982 can be seen as successive adjustments in the original design of the NHS and its administrative structure. However, the election of the Conservative Government in 1979, combined with a major funding crisis, brought more

profound changes. It is important to highlight that the oil crisis of the mid 70s increased the difficulty of funding public services. The vision of the NHS as a great social structure, a symbol of the welfare state, started to be challenged. Also, the idea of the NHS began to be contested in the untouchable aspect of the internal structure with the clinical absolutism and its complete autonomy in terms of service provision (Laing, 1994).

The Conservative Government (1979 – 1997) had three main lines in its programme: 1. control over public spending, 2. privatisation of state-owned companies and 3. reduction of taxation. Thus, pressure was placed on the NHS budget and the 1980s were characterised by the Conservative Government's attempts to make the NHS more 'business like' and efficient. It was then when the conflict started between government and pressure groups over plans to apply market principles into the NHS. The Thatcher Government firmly believed that the market mechanism was a much more efficient way to allocate resources than the State. Also, it was in accordance with general directives such as the creation of a more competitive and healthier economy, lowering public expenditure and taxes (Laing, 1994; Le Grand et al., 1998; Ellwood, 1996a, 1996b; Ham, 1999).

Emerging at the same time was the New Public Management perspective and the priority of 'value for money' in public resources (Hood, 1991). In the same period the services provided by the NHS were suffering lower budget increases and, simultaneously, the increasing demands of the population for services due to ageism, advances in medical technology, among others (Laing, 1994; Levitt et al., 1995; Le Grand et al., 1998).

Reduction in the growth of spending in the service was necessary to maintain a low public expenditure. A considerable variation in performance between different areas existed. There was a lack of information and little choice for consumers, the service was unsatisfactorily managed and there were no reasons for the doctors take into account the cost of treatment even though the NHS had worked with a cash-limited budget. Le Grand et al. (1998, p. 2) set out that:

> "furthermore the prevailing view of the Government, and large sections of the media, was that public services were characterised by outdated, inefficient practices, driven by narrow professional interest and were insufficiently responsive to users".

Such a situation demanded initiatives from Government and caused a phenomenon of continuous feedback and rearrangements of policy making in health. The general

management that followed the Griffiths' Report of 1983 "had the most significance in the longer term" (Ham, 1999, p.29). This report presented an absence of clearly defined general management function in the NHS and its failure to ensure that available resources were used efficiently to the benefit of patients (Laing, 1994; Levitt et al, 1995; Le Grand et al., 1998). The Griffiths' report recommended some keys proposals:

- the appointment of general managers at all levels in the NHS to implement leadership, a continuous search for change and cost improvement, and promote staff motivation,
- hospital doctors must accept the management responsibilities and take part in more critical decisions,
- the establishment of a Health Services Supervisory Board and an NHS Management Board, both boards to supervise and induce better management.

However, evidences from research showed again that the changes had different levels of success. The influence of the boards was still lacking in managerial terms, mainly because of political interference. In other words, this was because of its limited influence in the development of health policies, which was still the responsibility of the Department's Policy Group. At local levels, some impacts were identified, e.g. managers had gained influence in relation to doctors, and doctors and nurses had gained some management responsibilities. However, the effect of the Griffiths' report, which should be highlighted, was the given basis for the introduction of the internal market in 1991 (Mellett et al., 1993; Laing, 1994; Levitt et al., 1995; Le Grand et al., 1998).

2.1.2 Years of The Internal Market, 1991 - 1997

The 1980s presented a worsening difference between the money provided by the Government and the money needed to meet the demand. To illustrate, Ham (1999, p.32) sets out that:

> "by 1987-88, the cumulative shortfall in the hospital and community health services since 1981-82 amounted to £1.8 billion, even after allowing for the recurrent saving from cost improvement programmes. For 1987-88 alone, expenditure was almost £400 million below its target level".

The system was in crisis.

The 1980s exhibited other phenomena, the expansion of both the number of people covered by private health insurance and the role of private health care providers. In 1989, the amount of people covered by private insurance reached 11% of the population. At the same time, the

number of private hospitals both non-for-profit and for-profit increased. Moreover, the expansion of private insurance contributed to the rising number of beds offered by private hospitals. In 1988, there were 200 private and voluntary hospitals in England being responsible for 7% of acute beds (Ham, 1999, pp. 34f).

The above situation brought a ministerial review. It was understood at this time that lessons of financing the health sector could not be drawn from experiences of other countries, so the centralised and top-down system of Great Britain should persist. Nonetheless, attention was turned to a more efficient use of resources in delivering health services and particular importance was given to the idea that hospitals should compete with each other for resources in an internal market. Other terms such as 'social market', 'quasi market' or 'managed competition' are also appropriate to distinguish the results of the NHS reforms from the 'traditional market' due to its perceived unsuitability for health care (Levitt et al., 1995). Issues about spending and efficiency in delivering health services also included proposals to involve doctors in management and made them more accountable for their performance.

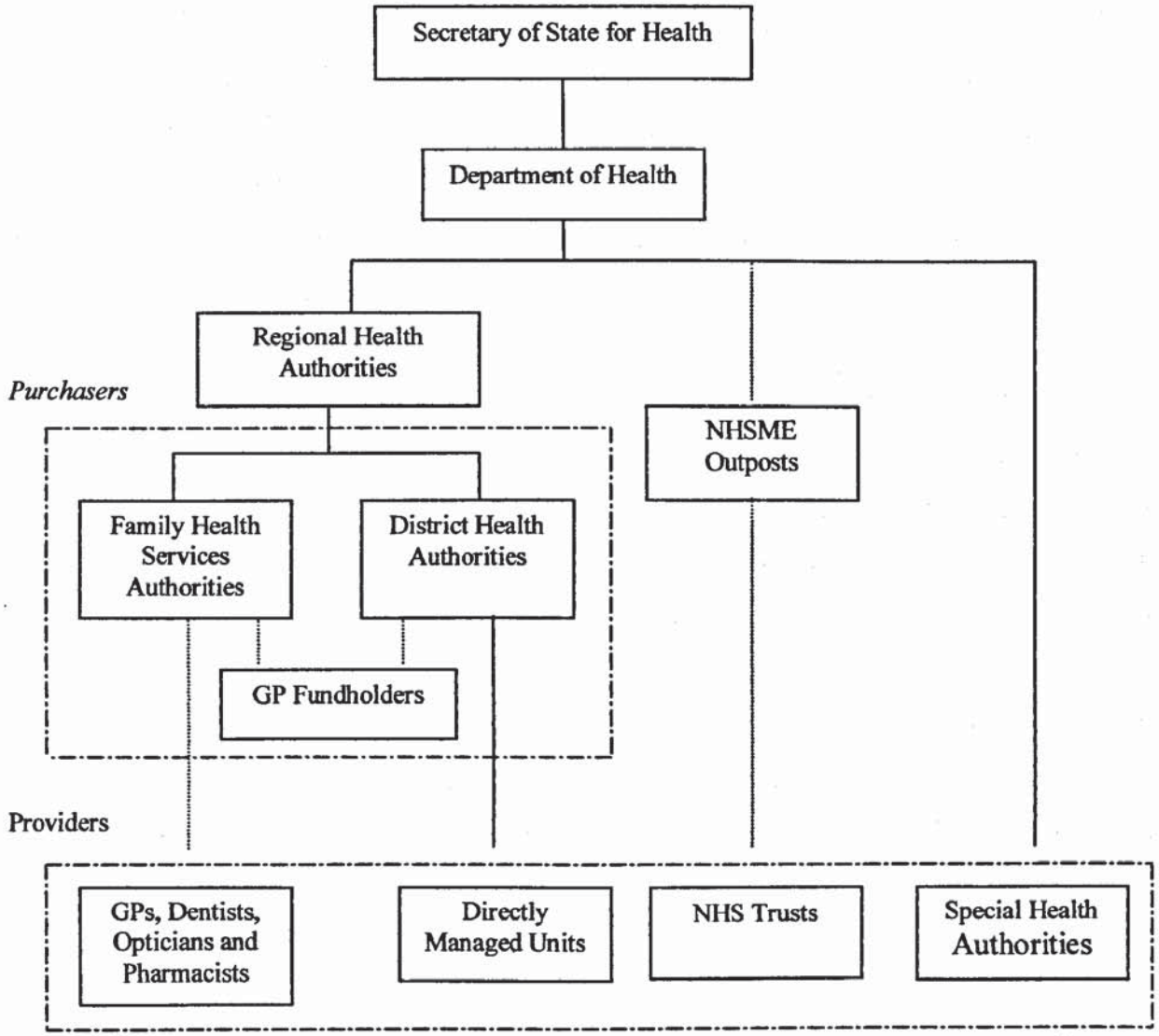
Thus, the White Paper Working for Patients was published, in January 1989 (Secretary of State for Health, 1989). In Working for Patients, the basic principles of the NHS were preserved such as funding being provided mainly out of taxation and access based on need and free at the point of delivery. The main changes were concerned with the way of delivering health services. Firstly, such changes intended to give conditions for competition between hospitals and other service providers. This was introduced because of the split between purchaser and provider responsibilities. Both functions were previously carried out within one organisational entity, i.e. the District Health Authority. At the same time self-governing NHS trusts and General Practitioner fundholders were introduced.

Secondly, the White Paper encouraged scientific management or 'managerialism'. The Department of Health replaced the inoperative Supervisory Board and NHS Management Board by a Policy Board and an NHS Management Executive. At the local level, composition of health authorities would follow business lines involving different rationalities.

Thirdly, Family Health Services Authorities replaced Family Practitioner Committees. All these authorities had boards comprising a small number of health professionals, non-executive members and chairmen.

Fourthly, the White Paper made doctors accountable for their performance. This brought the general managers closer to the clinical activity. This meant participation in the appointment of consultants, drawing up jobs for each consultant, deciding which consultants should be awarded, and developing new disciplinary procedures. The involvement of doctors and nurses in management was emphasised and medical audit was made a routine in both practice and hospitals (Laing, 1994; Levitt et al., 1995; Le Grand et al., 1998; Ham, 1999).

Figure 2.2 – The NHS Structure from 1991 to 1996 (England)



Source: adapted from Ham (1999).

The White Paper was heavily criticised mainly by medical professional bodies. The British Medical Association fought against both the new contract for GPs and the programme set out in the White Paper. The support to the reforms came from managers and health authorities. Despite the opposition, the Thatcher Government managed to implement it. The emerged NHS structure between 1991-1996 can be seen in Figure 2.2.

Despite criticism, there were service improvements such as a reduction in the long waiting times for treatment between 1990 and 1993, which provided some indication that patients benefited. However, it was said that these results were achieved due to increases in funding for the NHS in the same period and not because of real improvement in services (see Le Grand et al. 1998; Ham, 1999).

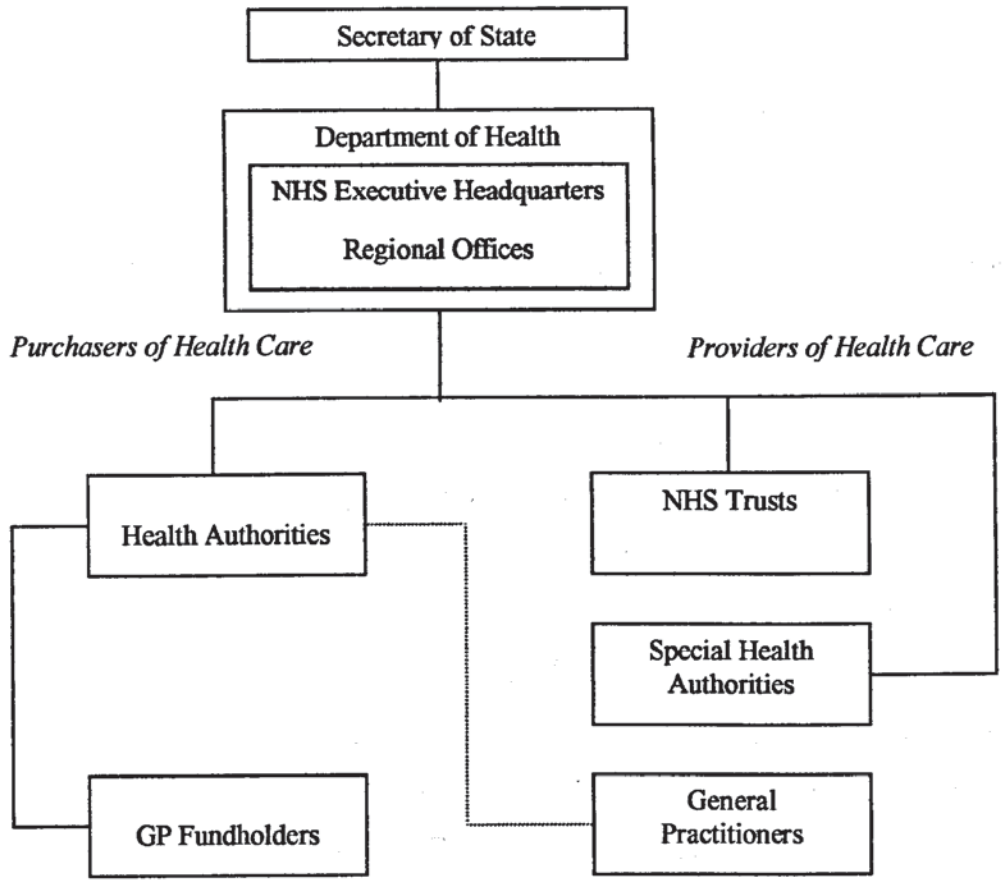
Maynard and Bloor (1996) claimed that the success of the reforms had been mixed. Le Grand et al. (1998) noticed some evidence of improvement in efficiency. However, they also noted that there was neither real difference in the accountability arrangements nor that the trust status had impacted on quality. Ferlie et al. (1996) found that Working for Patients impacted in some way on roles and relationships within the NHS. They recognised certain increased influence of managers and clinicians in management roles.

As the reforms continued, the contract based system proved more expensive to manage than the preceding integrated structure. Ham (1999, p. 48) estimated that the amount reached £ 1.5 billion in additional expenditure on management. Much of this increase could be attributed to the actions derived from needs to negotiate and monitor contracts and to supply information to purchasers and providers. This meant transaction cost, which technically the market situation should attenuate by itself. Transaction cost will be theoretically discussed in Chapter 4 of this thesis. This fact triggered a review of the roles in the structure starting with Regional Health Authorities and NHS Management Executive regional outposts in England and later on being extended to all hierarchical levels. These signs suggested that the structure of the NHS was no longer adequate.

After review, Regional Health Authorities and regional outposts were merged and renamed as NHS Executive Regional Offices, resulting in eight in total. Also, roles of District Health Authorities and Family Health Services Authorities were joined and other actions were implemented to minimise transaction cost such as the establishment of longer terms contracts

or services agreements and also, reductions in paperwork and regulation. The emerged new structure is shown in the Figure 2.3.

Figure 2.3 – The NHS Structure from 1996 to 1999 (England)



Source: adapted from Levitt et al., 1995.

2.1.3 Years of the The New NHS, 1997 onwards

In 1997 the Labour Government developed its own strategies on modernising the NHS. Ministers titled them the "third way" of reform meaning it was different from both the internal market of Conservatives and the application of centralised mechanisms of preceding Labour governments before 1979. The Labour Government reduced the emphasis on competition based on market principles and put more emphasis on partnership. However, it could be seen that competition persisted (Le Grand et al., 1998; Ellwood, 2000). The movement from competition to co-operation indicates equally a movement of the hospital organisational management structure from the market to a cooperative network.

In December 1997 the Labour Government published a White Paper The New NHS setting out proposals for the public health system. The New NHS, had six principles as stated by Ham (1999, p.55)

> ". to renew the NHS as a genuinely national service,
> .to make the delivery of health care against these new national standards a matter of local responsibility,
> . to get the NHS to work with partnerships,
> . to drive efficiency through a more rigorous approach to performance and by cutting bureaucracy,
> . to shift the focus onto quality of care so that excellence is guaranteed to all patients,
> . to rebuild public confidence in the NHS".

The White Paper proposed the modernisation of the NHS as the main objective. At the same time ministers emphasised the 'pragmatic approach'. Reflecting this fact the White Paper proposed the continued separation between planning of hospital care and its provision as well as the decentralization of responsibility for operational management to NHS trusts and also, the priority attached to primary care. The White Paper also brought a commitment to the promotion of partnership and co-operation within the NHS.

To some extent, there is a new central involvement in the NHS seeking to reduce variations in performance through the development of a national services framework and the creation of agencies like the National Institute for Clinical Excellence (NICE). More information about the performance of hospitals and General Practitioners will be available including promises to reward the best and, to some extent, penalise the worst. Simultaneously, it emphasised the freedom of GPs and others in the new primary care groups to make decisions on the use of resources at local level and to improve services (The Economist, 2000: 8181).

At the same time, ministers posed their plans of incentives to NHS staff to increase efficiency and raise standards together with sanctions to penalise poor performance. The White Paper also extended the frontier of performance assessment, which would be based not only in relation to efficiency (the preoccupation of the Thatcher and Major governments), but also to health improvement, patient experience, fair access, effective delivery, and health outcome.

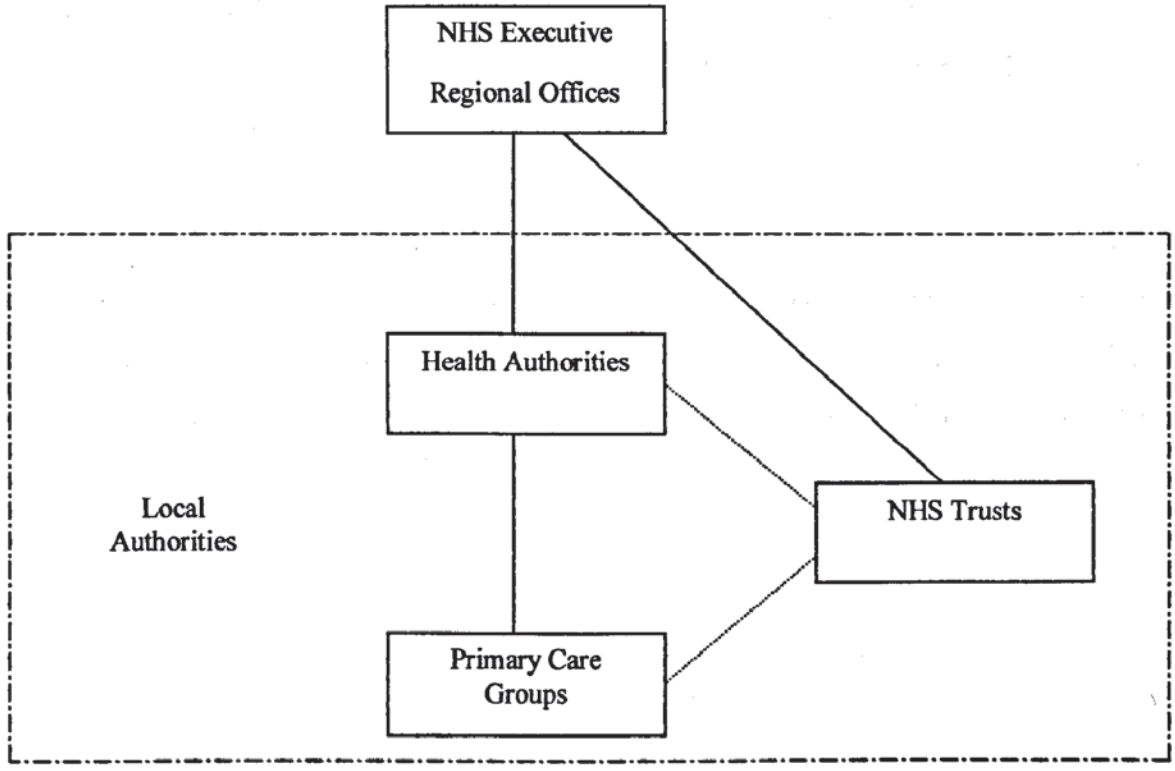
The New NHS also included a commitment to continue paying for health care via taxation and to increase the spending in real terms every year. Due to this commitment the government expects reduction in waiting lists for treatment, application of information technology to deliver services in different ways reflecting key gains in quality and efficiency.

The new structure, as shown in Figure 2.4, reflects that the health authorities are the core of the new NHS. Recently, they became Strategic Health Authorities. Their functions in the White Paper are clearly defined as:

- "Assessing the health needs of the local population, drawing on the knowledge of other organisations,
- drawing up a strategy for meeting these needs, in the form of a Health Improvement Programme, developed in partnership with all the local interests and ensuring delivery of the NHS contribution to it,
- deciding on the range and location of health care services for Health Authority's residents, which should flow from, and be part of, the Health Improvement Programme,
- determining local targets and standards to drive quality and efficiency in the light of national priorities and guidance, and ensuring their delivery,
- supporting the development of primary care groups so that they can rapidly assume their new responsibilities,
- allocating resources to primary care groups, and
- holding primary care groups to account" (Ham, 1999, p.57)

NHS trusts also received particular attention and became main organisations in the new structure. The trusts' responsibilities continue as before but they are asked to collaborate with health authorities. Thus, it is expected that health authorities involve trusts fully in the preparation of Health Improvement programmes. This seeks to increase the chance of success of these programmes (Ellwood, 2000).

Figure 2.4 - The New NHS structure



Statutory accountability: ——— *Service accountability:* ——— *Health Improvement Programme:* ———

Source: Secretary of State for Health (1997)

Simultaneously, supporting this, new statutory duties were created both for partnership and quality. Thereby, chief executives of trusts were held responsible for the quality of the services provided and a sub-committee, chaired by a senior clinician, is established within each trust to work on quality. Thus, paralleling the proposal for a National Institute for Clinical Excellence and a Commission for Health Improvement, the principle of clinical governance was introduced, indicating that quality is a fundamental objective.

The Primary Care Group was introduced and addressed the commitment to maintain the move towards a more participative primary care, which began with Conservative policy. They were called to take on the management of community health services and became Primary Care Trusts also involving GPs commissioning. Thus, an NHS emerges where doctors and nurses in primary care would have a greater say (Ellwood, 2000). Also, Primary Care Groups were given control of up to 90% of the budget together with some freedom to unify different elements in the budget. Therefore, the allowance of resource transfers between hospitals and the community was important, causing an incentive for as much work as possible to be done in primary care. Furthermore, a consequent reduction on the demand of hospital services was undertaken. The objective posed in the White Paper was to align clinical and financial responsibility extending the fundholding experience to the whole primary care (Ham, 1999). At the same time, the Government is concerned with recruitment, aiming to hire up to 9,500 additional doctors and 20,000 further nurses by 2004 (The Economist, 2000: 8181).

Despite much political rhetoric, the internal market did not disappear under the Labour Government, the remains of competition are evident in the commitment to a nation-wide collection and publishing of data seeking to compare the performance of providers. Primary Care Groups can also move services from one provider to another, for example, if improvement in performance is not convincing.

2.2 Hospital Management style/approach

According to Lapsley (1994, 1997) the NHS, from its inception, could be characterised as an organisation dominated by the medical profession "in terms of the nature, shape and level of healthcare delivery" (Lapsley, 1994, p. 17) and hospitals could be similarly characterised (see, for example, Bourn and Ezzamel, 1986; Rea, 1994). Also, the acceptance that the management structure within the NHS was a clan was accepted (see, for example, Bourn and Ezzamel, 1986; Lapsley, 1994). The Griffiths' Report suggested these observations and proposed actions to transform it. Under the Conservative Government, the NHS underwent reforms from the clan-based/culture control to hierarchy and then to the market, which clearly affected the management structure and consequently, planning and control, within hospitals.

This section distinguishes the presence of the two internal groups within hospitals and the dominance of the administration by the medical profession in 2.2.1 The basis of the organisational clinical domain. It also presents the hospital management evolution: 2.2.2 The clan-based/culture control, 2.2.3 The hierarchical control, 2.2.4 The market control, and 2.2.5 Co-operative networks – the new model.

2.2.1 The basis of the organisational clinical domain

It is important to recognise that medicine has privileges and a natural force within society, mainly when one is studying both interrelated accountability and clinical activity (see, for example, Rea 1994; Guimaraes and Tavares, 1994). Doctors have almost complete autonomy in their work. The judgement of medical work such as the diagnosis, treatment, and duration of the treatment can be done only by another member of the medical group.

According to Rea (1994) the diagnosis is just one complex stage in a much more complex process. Individuals are different and have different consideration about the meaning of health, depending on factors such as age, gender, and social norms. Individuals can also look for medical advice at different stages. In some cases the doctors should be concerned with their patients' condition for work and organisational responsibilities. Thus, the diagnostic stage involves social, legal and moral judgements. The treatment is also a complex stage, involving the same level or an even harder to make judgement. There is the constant menace

of undesired or nil effects and a successful outcome depends on each individual. Those three stages – diagnosis, treatment and outcome – are understood as being rarely analysed. Sometimes statistics show bad results such as poor mortality rates involving certain treatments, that can justify intervention (Rea, 1994). This individual-to-individual contact is responsible for the emergence of complex rationality within hospitals. The relationship between doctors and patients is close. The decision-making in this case frequently occurs in the base of the organisational pyramid and moves bottom-up.

Professional judgement in medical terms has been the ultimate criteria for health care resource allocation within hospitals (Hunter, 1979; Haywood and Alaszewski, 1980; Ham, 1982; Wilding, 1982; Ham, 1999). To some extent, this can be explained by the fact that clinicians are responsible for diagnosis, treatment and outcome. Around 80% of hospital expenditure is generated by clinicians decisions (Ashmos et al., 1998).

Since the inception of the NHS, governments or hospital managers had little, if any, effective means of monitoring or controlling this expenditure (see, for example, Lapsley, 1993; Haywood and Alaszewski, 1980; Butts et al., 1981). The Griffiths' Report seemed start a process that modified this situation (Lapsley, 1993). Since then, the ability and ease of the medical profession to dominate health care decision-making and the managerial mechanisms used within the NHS or within the hospitals have been studied, questioned and tested (e.g. Phillips and Dawson, 1985; Elston, 1991). However these studies seem to be more related with the managerial model – general management and placed little emphasis on opportunistic behaviour and alternative forms of management.

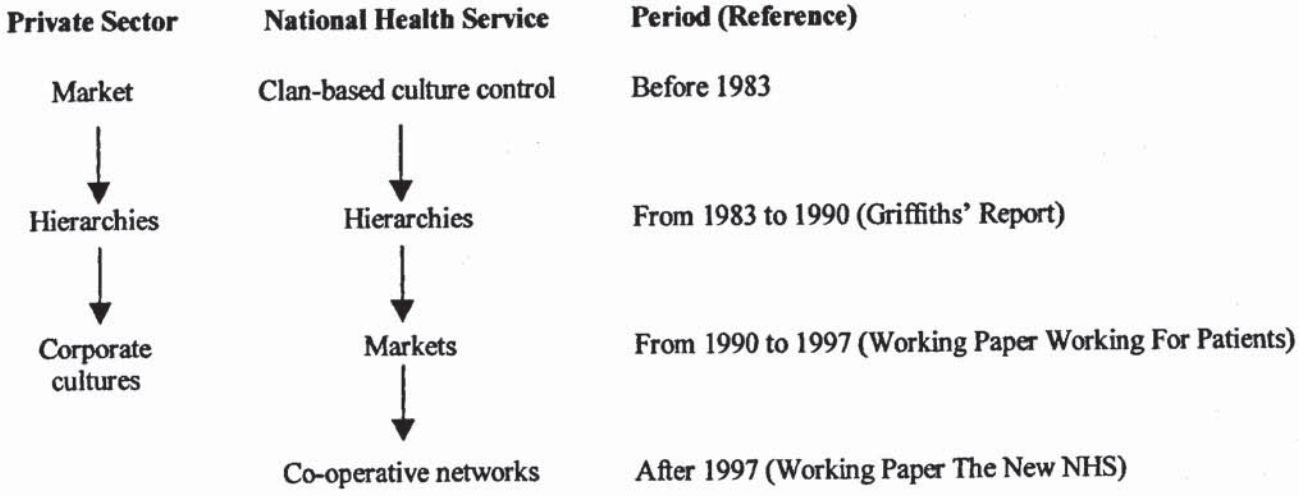
Seeing it this way, it is natural that, standards, practices or ethical subjects are of the medical clan domain. Therefore, decisions concerning such a situation remained free of accountability or administrative purposes for a long time. Though the "accountability might justifiably encompass some assessment of diagnostic procedures, the treatments that follow diagnosis, and the outcomes of treatment" (Rea, 1994, p. 87), only information based on morbidity has been able to cause any intervention, due to the 'professional autonomy' of the medical clan. It can be identified barriers between clinicians and administrative groups within hospitals. Nonetheless, the British Government has interfered in this state of affairs and produced and reproduced mechanisms of accountability, competition and cooperation that has broken or mitigated these barriers.

2.2.2 The clan-based/culture control

Modifications in the British healthcare system started at the beginning of the 1980s (see Figure 2.4). The Griffiths' Report (1983) can be considered the main carrier of organisational reforms and the starting point of the process that led to an increasingly managerialist and private sector style organisational culture in the NHS (Pettigrew et al., 1988; Dewing and Jones, 1994, Lapsley, 1993).

These reforms encountered an organisation completely dominated by a clan culture formed essentially by the medical profession (Bourn and Ezzamel, 1986, 1987; Burke and Goddard, 1990; Lapsley, 1993). Among the factors that sustained this circumstances was the high goal congruence of the members and performance ambiguity of clinical activity, which were tolerated by the clan (Bourn and Ezzamel, 1986). The medical profession, as a well-defined sub-culture within the complex organisation, is also supported by important symbols, practices and narratives perfectly understandable only by members of the clan. The presence of such a sub-culture as an element of the bureaucracy dominated the organisation within a few, if any, administrative or financial constraints (Bourn and Ezzamel, 1986, 1987).

Figure 2.4 – Periods of the main modes of coordination in the National Health Service – Great Britain



Note: This figure only shows the emphasis given by political and economic processes.
Source: adapted from Lapsley, 1993.

The clan, as the means of coordination, arose as a response to bureaucratic failure (Ouchi, 1980; Osborne, 1997). In the presence of this model, no attempt is made to suggest rational or even efficient reasons for normal planning and control or co-ordination of social life

within the organisation. The emphasis is given by organic relationships. Therefore, within the hospitals lies a social context, which enables and constrains the action of the actors instead of any other mechanism. Bourn and Ezzamel (1986) noted that this model is considered responsible for rising internal transaction cost due to unnecessary delays in decision-making. In terms of problem solving, the behaviour is, to a large extent, a problem of avoidance rather than searching for a solution. Consequently, it is a model of 'institutionalised stagnation' (Griffiths, 1983; Lapsley, 1993).

Within hospitals the dominance of the clinicians, doctors essentially, is imperative. However, the co-existence of another structure, a hierarchical one, of control must be recognised. The Griffiths' proposals brought, in essence, an attempt to integrate both modes of co-ordination and decentralisation of cost and budget systems with the insertion of managers down to the unit levels. The Griffiths' Report reshaped the internal structure strengthening the hierarchical control structure (Jones and Dewing, 1997).

2.2.3 The hierarchical control

This phase is seen much more as a bridge from the clan-based culture of control stage to the internal market stage. One reason for changes was the criticisms about the services provided by the NHS at the beginning of the 1980s, see Figure 2.5. They demanded governmental interference and, therefore, the Government decided to apply fully the Griffiths' proposals. This moment suggested the beginning of the implementation of the managerialist model and, consequently, more rationalist, which brought about the emphasis in accounting mechanisms and information.

The reforms sought to institutionalise a hierarchical form, see Figure 2.4. This model defends individual activity constraints in order to achieve social goals. Hierarchies are considered the most efficient and effective organisational form to coordinate work tasks within an organisation (Jacques, 1991; Osborne, 1997). The core mechanism of such a model is the coordination by means of vertical management structures.

These reforms did not come without any opposition of the already installed clan and strong sceptical concern. Evidence showed that managers would rarely challenge doctors except in terms of financial exigencies (Bourn and Ezzamel, 1986; Harrisson et al., 1989). Other

subsequent attempts to make clinicians more accountable such as Management Budgeting and the Resource Management Initiative, also achieved a limited result. The complexity and resistance of the clan-based culture of control for changes proved to be deeply rooted in the system. Some external policies and initiatives were challenged. The Government interfered again and created the internal market.

Figure 2.5 – NHS management concerns per phase

Structure	NHS – Concerns
Clan	. Variation in performance between different hospitals and areas. . Lack of information. . Lack of possibility of choice for consumers. . Service unsatisfactory managed. . There were no reasons for doctors to take into account the cost of treatment even though the NHS worked with a cash-limited budget. . Outdated services. . Inefficient practices. . Driven by narrow professional interest. . Insufficiently responsive to users. . Delays in decision-making. . Problem avoidance rather than problem solving.
Hierarchy	. Difficulty of relationship between layers. . Existence of too many tiers and administrators. . High cost of the organisation.
Market	. Long waiting times for treatment. . Dissatisfaction with services. . There was no real difference in accountability arrangements. . Trust status had not an impact on quality. . Contract based system showed more expensive to manage than the preceding integrated system. . High level of difficulty in providing cost for pricing. . Promotion of competition (based on price).
Co-operation networks	. High level of difficulty in providing cost for comparison. . Promotion of competition (based on comparison).

The internal market sought competition between hospitals. If effective, it should constrain costs (DoH, 1989). Also, the transference of responsibility should improve performance. Jones and Dewing (1997, p. 262) set out that "these changes implied revised organisation goals, devoted financial accountability to clinicians, threatened deep-seated cultures, and challenged the balance of power between clinicians and administrators". These efforts could be considered as an attempt to control resources and allocate them more effectively.

2.2.4 The market control

The Working Paper Working for Patients led to the internal market, see Figure 2.4. It can be considered that the central point in the Britain's NHS internal market was that providers of

health services should not be the same as those who are responsible for provision of healthcare (Rea, 1994).

In simple words, market forces should ensure that purchasers place contracts to providers aiming to obtain maximum services at minimum cost. The market can regulate cost and promote competition between providers, which, in turn, increase their efficiency (Dewing and Jones, 1994). It was believed that the market mechanisms would be able to give expedient answers or bring an end to complaints that emerged from the clan-based and hierarchy modes of governance (see Figure 2.5).

Changes on resource management and accountability can be credited to the modifications that create the internal market in health care involving both the NHS and the private sector. As posed by Rea (1994, p. 11), the reforms published in the 'Working for Patients' sought to increase "accountability 'upwards' and to provide incentives so that money would flow to those hospitals which treated most patients". In this situation costs require a precise specification as well as characteristics of quality of service. They were the bases for the contracting system. Information is the most important element in the market and, in this case, the development of adequate cost information is still being discussed (Bryan and Beech, 1991; Lapsley, 1991; Mullen, 1991; Royce, 1993; Ellwood, 1996a, 1996b, 2000).

With the internal market model, hospitals' were forced into a more 'commercial' and 'competitive' context. Therefore, the two structures of management became better defined than ever, they were obligated to interact, which in turn reduced barriers between them. Clinical and administrative functions were transformed. The former had to give some power and influence to the latter. Situations where clinicians had not been involved before began to be, at least, tested and monitored by central administrative managers that had some power (see Jones and Dewing, 1997). Such a situation can generated an overlapping and coherent competition of 'means' and 'ends' within hospitals that clearly reflected on planning and control processes (Jones and Dewing, 1997). However, the internal market was considered inoperative and inappropriate, this led to the evolution of a new model, based on co-operation.

2.2.5 Co-operative networks - the new model

This new model, co-operative network rather than internal market, was introduced when Labour came to power, which sought to put an end to complaints and enhance the managerial structure, see Figure 2.4. Despite much political rhetoric certain market mechanisms did not disappear under the Labour Government. For example, a form of competition is still evident in the commitment to collect and publish nation-wide information on costs of treatments, allowing comparative performance of providers. The new government went further in emphasising competition by comparison:

> "The Blair Government sought to bring about changes in behaviour through a variety of mechanisms, including new forms of regulation, the use of information to compare performance, the application of incentives, and the further development of peer review among health professionals" (Ham, 1999, p.62).

NHS trusts also received particular attention and became main organisations in this new model. The responsibilities of the trusts continued as before but they were asked to collaborate between each other and with health authorities. Thus, it was expected that health authorities involved trusts fully in the preparation of Health Improvement Programmes (Ellwood, 2000).

The objective posed in the White Paper The New NHS was still to align clinical and financial responsibility extending the fundholding experience to the whole of primary care in a typical exercise of decentralisation, e.g. Primary Care Trusts. This model of co-operation is still valid, however, the Government has announced a new increase in the healthcare funding system and a ten year plan "They invariably respond with a mix of money (a 35% rise in real spending on the NHS over the next five years was announced in March) and reform (Mr Blair unveiled a new ten-year national plan on July 27th)." (The Economist, 2000: 8181, p. 21).

Despite the importance of the theme, this research is not questioning the medical performance but the rationality and complex rationality involved in decision-making and problem solving within the hospital. The interrelation of these with opportunism and bounded rationality with managerial behaviour is discussed in Chapter 4. This must be considered in terms of planning and control using output of accounting systems i.e. cost information.

2.3 NHS Cost Information

This section is introduced with a brief discussion: 2.3.1 Costing within the NHS, 1948 – 1980. Afterwards, the cost information is considered in three relevant stages or phases: 2.3.2 Budget Management and Resource Management Initiative, 1980s; 2.3.3 The internal market – cost information for pricing and competition, 1990 – 1997, and 2.3.4 The New NHS – cost information for comparison and co-operation, 1997 onwards.

2.3.1 Costing within the NHS, 1948 - 1980

Cost information within the NHS has been considered important since its inception in 1948. Despite this, it has had considerable difficulties in overcoming hurdles in providing customised cost information, which has made the NHS invest even further.

In 1957, the NHS introduced its department-based cost System (Montacute, 1962; Rea, 1994). Montacute (1962, pp. 30f) had already pointed out certain particular problems involved in applying costing systems to hospitals:

> "1. measure the quantity of work performed or service given;
> 2. the element of quality and extent of service: its paramount importance;
> 3. the absence of the profit motive; and,
> 4. the attitude of members of hospital authorities who are more likely to be interested in the expansion of the service than in achieving good financial results, particularly as they are not responsible for raising the necessary revenue".

One can add to those above mentioned problems, the highly aggregated level of expenditures. Despite these problems, this system was in place until the end of the 1980s.

It is commonly known that some experiments with other forms of budgeting and costing with a reasonable degree of success took place in this period and are still used. For example, during the 1970s there were examples of Speciality Costing and Patient Costing (see Wickings et al., 1983). These previous exercises led to changes in the 1980s.

2.3.2 Management Budgeting and Resource Management Initiative, 1980s

As a response to the Griffiths' report, Mellett et al., (1993, p. 10) posed that:

> "For general management to prove dynamic and responsive to the changing environment, the monitoring of financial performance had to cease simply being the passive consideration of sets of figures and had to become an integral and active part of management's measurement and evaluation of organizational efficiency and effectiveness."

This approach to the management of resources at that time received the generic title of Management Budgeting, which encompassed very sophisticated cost information based on standard costs. It experienced difficulties and sometimes serious opposition from medical consultants after its initial application experience (Bourn and Ezzamel, 1987; Rea, 1994).

Management Budgeting, as a governmental exercise, arose during the 1980s with the establishment of Units of Management, four Management Budgeting sites were established initially, which were encouraged to take responsibility for their budgets within District Health Authorities. Griffiths proposed to enhance the delegation of accountability for budget performance for managers at unit level (Mellett et al. 1993). This should have highlighted planning and control.

The difficulties of Management Budgeting were initially stated as being caused by the interdependence between organisational departments (sub-units). It is recognised that some of the rules were dispersed in terms of responsibility and/or applicability due to unclear boundaries. Aiming to reduce, or even eliminate, such a fuzzy boundary required the design of "the organisation on a product-group or service-group basis, rather than a purely functional basis" (Bourn and Ezzamel, 1987, p.30).

In general, the budgeting system was divided into four groups: support services (catering, cleaning, laundry, etc), facility (nurses in charge of clinics, theatres and wards), diagnostic and treatment (radiology, pathology, pharmacy) and consultants. The conventional mechanism of charging hospital areas that used the service supplied by other areas took place using previously agreed prices. Different hospital areas gave options of choice between more or less expenditure on services provided. This led to the M-form proposed by Williamson (1975), which can be related with the posed specialisation presented by Porter (1990) and other contemporaneous authors (see, for example, Emmanuel et al., 1993).

Other difficulties were posed in terms of the group formation, e.g. how much funding could be allocated to each group and how and which prices should be charged (Bourn and Ezzamel, 1987; Mellett et al., 1993). The service was still based on a

> "'subjective' analysis into subjects of expenditure (salaries, drugs, provisions, etc.). Within this, the conventional system maintained only a 'functional' analysis into direct and indirect expenditures on patient services, sub-divided into a wide range of 'functions' such as medical staff, nursing staff, diagnostic services, other services, and the various administrative and support services" (Bourn and Ezzamel, 1987, p. 37)

A further complication was the presence of the normal asymmetry in power and influence within a professional organisation such as hospitals. Where responsibility and power are distributed between operational (professional) and administrative components (Bourn and Ezzamel, 1987). Such an asymmetry could be felt in the budgeting experience. Rea (1994, p. 90) set out that "the introduction of Management Budgeting took place in an atmosphere of increasing tension between managers and clinicians", i.e. the two internal groups, the hierarchy and the clan. The sites where Management Budgeting was tested failed and it manifestly emphasised the necessity for more commitment of clinicians and local managers as well as further development of information systems (Mellett et al., 1993; Rea, 1994).

Other attempts to implant Management Budgeting failed, which was explained by shortcomings of the computer-based systems – clinicians saw the systems as inaccurate and outdated information suppliers; in turn managers accused clinicians of being obstructive. Management Budgeting was blamed as responsible for the tension between individuals and organisational groups. One of the conclusions reached was that it "is naïve to believe that a computer based system would turn clinicians into 'effective resource managers'" (Rea, 1994, p.90).

Despite these difficulties, Bourn and Ezzamel (1987), Mellett et al. (1993) and Rea (1994) set out some considerations and between them can be detached three important elements. Firstly, it is possible to have a system of financial devolution working properly if the clinicians put an amount of time and effort into it. Secondly, the system can be driven in accordance with clinically derived considerations. Thirdly, the combination of administrative bureaucracy and decentralised clinical groups is now possible.

Resource Management Initiative (RMI) succeeded Management Budgeting. It was proposed stressing the involvement in terms of management. This presented a remarkable change in focusing on the organisation rather than the system or function. RMI was supposed to be not 'information systems driven' but 'information user driven'.

However, it was considered that

> "management arrangements, which centrally involve doctors and nurses were a necessary precondition. Moreover, the information provided must be perceived by doctors and nurses as relevant to their work ..., and should not be seen as an accounting exercise, or as a device for cost-cutting" (Rea, 1994, p. 91).

Government's support to a system of budget information for medical specialities can be seen as an attempt to interfere in the field where clinicians and administrative managers are planning and controlling clinical activity. In this field, medical knowledge and practice are important, but nowadays, accounting and management practices are important too.

It is significant to notice that developing the required management arrangements, internal structures based on clinical directorates emerged, involving clinicians not only in the budget management process but also in other planning and control activities. "The emphasis was on the involvement of clinicians as groups or firms, with each group having a designated clinical director responsible for the directorate's budget performance" (Mellett et. al., 1993, p. 11), that is different from Management Budgeting, with individual clinicians managing their own budgets.

The Internal Market situation came after the RMI and as set out by Mellett et al., (1993, p. 12) " the creation of post-reforms 'market-place' was assumed by some commentators at the time, albeit briefly, as meaning the end of the formal RMI". However, RMI was understood as being a means to an end and not an end in itself and a management tool encouraging the efficient use of resources. Mellett et al., (1993) stressed that the contracting environment defined into the internal market increased the need for the RMI or something conceptually similar.

2.3.3 The Internal Market - cost information for pricing and competition

The internal market had peculiarities that must be identified. Firstly, it was not a 'naturally' emerged market, i.e. not the result of actors interaction, as purchasers and providers randomly disposed with free negotiation. In the former case, the relationship between demand and supply is imperious and price information is sufficient. The NHS internal market was determined by the Central Government

According to classical economics perfectly competitive markets present the most efficient means of resource distribution and freedom of transactions, (discussed in Chapter 4). But internally health care systems are subject to substantial state intervention restricting organisational behaviour. This State intervention is fully justified by the relevance of equity of health treatment and the nature of the health system.

Secondly, the NHS internal market

> "differs from conventional markets on both the demand and the supply sides. On the supply side there is competition between service suppliers. However, these organisations (NHS trusts) are not necessarily out to maximise their profits. On the demand side, the immediate consumer is not the one who exercises the choices concerning purchasing decisions, these choices are delegated to a third party (DHA, GP) who acts as a guardian of patients interests" (Ellwood, 1996b, p. 28).

Despite these posed particularities, one can highlight that competition is directly responsible for some efficiency gains (Mellett et al., 1993).

The introduction of the internal market led to the introduction of pricing mechanisms in the healthcare system and full-cost pricing for health care contracts. This could, at first glance, be understood, as an attempt to use full-cost pricing and capital charging as a managerial solution to the NHS's budgeting problem (Mellett et al., 1993; Shaoul, 1998). The introduction of such a proposal can be explained by the following objectives:

1. Encourage managers "make the most efficient use of their physical resources" (DoH, 1989, paragraph 2.23) capital assets no longer regarded as 'free goods' whose possession and consumption seemed free of charge;
2. Enable "comparisons of cost and performance between different parts of the NHS and the private sector" (DoH, 1989, paragraph 2.23).

As set out by Ellwood (1996a), "in the internal market, District Health Authorities and General Practitioners Fundholders contract with hospitals to provide specific services in return for agreed funding". The Government established the 'contracting environment' underpinned by three forms of contract:

1. Block contracts: they are not related with volume, they involve a fixed amount of money for a defined service.
2. Cost per case contracts: a specific fee paid for a specific item of service.
3. Cost and volume contracts: specifying the volume of service demanded against an agreed payment but also a variable element allowing changes at the margin.

Extra Contractual Referrals are possible in specific cases where no contract existed.

To enhance competition between providers, the government did not define captive areas of attendance, meaning that a purchaser could choose services based on price or other factors. In this case, 'competition' was supposed to occur between hospitals. This competition is expected to encourage a "more economical use of resources, thus improving technical efficiency" (Ellwood, 1996b, p. 281).

Ellwood (1990, 1996a, 1996b, 2000) has provided a continuous analysis of the cost information within the NHS. In the internal market, prices were expected to be able to provide a comparison for judgment between providers and a market regulator. In the first year of the internal market, the government imposed three basic principles, which involved cost information (Mellett et al., 1993, p. 159):

> "1. the generally charged price should be equal the actual or anticipated cost of revenue;
> 2. costs should include depreciation, calculated on a straight line, current cost basis, and an interest charge of 6% on capital assets employed;
> 3. there should be no planned cross-subsidisation of cost between contracts or purchasers".

Despite this important role played by cost information within the hospitals, these principles where not enough to provide a basis for competition. Ellwood (1996a, p. 285) points out that vast variations in price were apparent in 1991 and that "the choice of clinical specialty as the cost product is bound to give rise to distortions due to differences in a specialty case-mix or a complexity between hospitals rather than efficiency". The cited reasons include difficulties initially in determining the prospective quantum of cost, inadequate activity measurement and poor and inconsistent methods of cost attribution. The different approaches to costing caused significant differences between prices and the conclusion was that "prices were not a reliable indicator of resources consumed" (Op. cit., p. 286).

Thus the pricing mechanism did not find a well-established process of costing, but a process, to some extent, poorly understood with inadequate methods and lacking involvement by clinicians. Costing was not only a case of accounting and disputed techniques, but it is also a product of the conjugation of forces – structural, political and behavioural.

In April 1993 the NHS Management Executive attempted to establish guidance for Costing in Contracting. As posed by Ellwood (1996b, p. 287) the "detailed guidance aims to avoid

differences in reported costs for the same patient treatment caused by unnecessary differences in cost allocation and apportionment between different providers". Northcott and Llewellyn (2001), reporting on costs for benchmarking in 1998, showed that there are still technical difficulties in costing processes.

The attempt to provide standards for the costing information system was welcomed. It was, however, not obligatory, but only strong guidance. In 1994 and 1995 hospitals priced procedures for in-patient and day case provision separately. Variations in price persisted despite some similarities in procedures. The problems with classification of treatments did not advance a solution and the providers did not regroup their budgets into nationally recognised categories. The impact on the purchaser-provider process is difficult to access. Shifts between purchasers when the prices were compiled into contracts were less than expected. The explanation included the possibility of the manipulation of the costs in accordance, for example, to the purchaser ability to pay or other elements that emerge from complex rationality such as reputation of consultant or courtesy of consultant to patients. Case-mix costing and other resource management systems were still not available to most providers (Ellwood, 1996a, 1996b).

Lowe and Doolin (1999, p.181) set out "the most significant change which relates directly to the use of accounting and similar technologies concerns the introduction of 'case-mix' accounting systems, most commonly utilizing Diagnosis Related Group (DRG) coding techniques". The emergence of the Healthcare Resource Groups (HRG) allowed an evolution in costing and resource management within hospitals. HRGs were based on the American Diagnosis Related Groups (Bloomfield, 1991) modified "to reflect British clinical practice" (Ellwood, 1996b, p. 290).

Regarding 1996/97 contracts, the NHS Executive asked providers to cost HRGs in at least one of three specialities. Differences in the price of products still occurred, some of them explained by the differences in the costing method (see Figure 2.6)[1]. The survey carried out by Ellwood (1996b, p. 291) showed that "little use had been made of HRG cost information

[1] Ellwood (1996a, 1996b) firstly deciphered important differences in generating costing information between market participants. Different accounting choices can provide different results, meanings and, consequently, managerial interpretations.

in negotiating 1995/96 contracts". The reasons for this were given by subjective intentions and preferences. It emphasises the contingent aspect involving cost information.

Ellwood (1996b, p. 291) set out

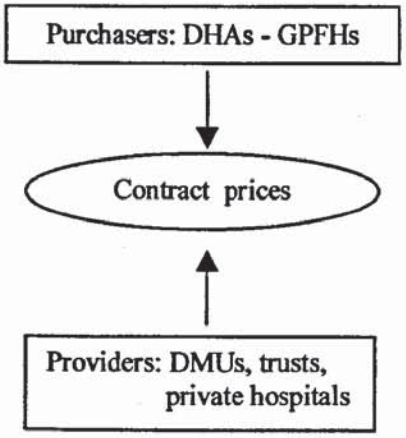
> "despite the little use made of HRG costs in negotiating 1995/96 contracts, only two purchasers were entirely negative or undecided about the future use of HRG. The majority of purchasers expected HRG to form the currency of their contracts in future years".

It certainly provided the necessary stimulus to look for better strategies on costing information policies within hospital.

Figure 2.6 - NHS internal market

Conditions for economic efficiency	Accounting choices
Purchasers . Respond to price signals	Product Level . Speciality . DRG – HRG . Patient
Prices . Related to activity . Comparable . 'True' cost	Cost Approach . Full cost . Marginal cost
Providers . Productive efficiency through competition . Openness in costing	Techniques . Traditional styles of apportionment . Complex – ABC

Source: adapted from Ellwood, 1996a, p. 29.



It could be argued that costing was emphasised and developed for pricing. Nevertheless, evidence has shown that HRGs were not applied to contracts between purchaser and provider for pricing purposes. The cost information began to provide costed care pathways and information on how resources were consumed within the hospitals. The next step was the National Reference Costing Exercise proposed by the White Paper The New NHS.

2.3.4 The New NHS - Cost information for comparison and co-operation

Since 1997 the role of cost information has been revised. The new situation was explained by, for example, the failure of the price as an adequate requirement of information in the internal market. Ellwood (2000, p. 23) posed that

> "the present Government's policies for the NHS are to remove the competitive nature of the internal market, promote co-operation and replace annual contracts with long-term service agreements. Recent initiatives include the evolution of Primary Care Groups (PCG); the introduction of national reference costs, benchmarking, the National Institute for Clinical Excellence (NICE), and the Commission for Health Improvement".

At the end of 1997, the Labour Government published the White Paper The New NHS. Despite what can be considered a major tolerance and looseness on contracting by prices, it is important to highlight that the Government did not give up on the issue of cost and resource management. There is evidence that clinical and financial responsibilities are still linked. It is also important to show that if contracting on prices failed, the cost information kept its previous importance and grew:

> "evidence on cost effectiveness and quality is to be used to produce National Service Frameworks. The National Institute for Clinical Excellence will produce clinical guidelines based on evidence of clinical and cost-effectiveness; associated clinical audit methodologies and information on good practice in clinical audit" (Op. cit., p. 24).

It seems, however, that it is yardstick competition, it is now based on cost comparison and not on price.

This shows that differences between pricing of the same speciality or clinical procedure cannot be solved only by blaming the cost measurement method, but by reviewing the procedure. In this case, more sophisticated cost measurement methods with detailed resource consuming descriptions are welcome. One cannot deny the rise of complexity of the costing methods, but certainly, the gains in sophistication are significant. At the same time, the Government insists on the national rules in terms of how costs are classified and compiled to produce cost information.

The NHS has set up a National Costing Strategy Group developing costing information that both "retains the flexibility to meet local needs but ensures sufficient consistency across all NHS trusts to allow robust comparison" (NHS Costing Manual, 1999, p.2). It continues, "this will not only support the published National Schedule of Reference Costs but also facilitate benchmarking" (ibid). Cost information is published nationally and its use has been expanded.

Cost information has been available in the NHS for many years prior to the internal market and has developed considerably in the 1990s, but with The New NHS its importance was increased even further. The UK Government wants the disclosure of the cost information and its national dissemination, triggering benchmarking processes of hospital internal systems.

The Government intends to identify those systems or services that use resources in an adequate way and facilitate benchmarking. In The New NHS, the cost information as an aid

to healthcare purchasers to choose providers should be reduced, giving its place to other objectives, such as to secure accountability, to identify areas of poor performance or to enhance epidemiological and other health data. To summarise, "the envisaged use of performance data would seem to be more in line with how Nutley and Smith (1998) perceived the use of performance data ... to help raise overall standards of care" (Ellwood, 2000, p. 29).

Thus, the Department of Health has introduced the National Reference Costing Exercise (NRCE). This procedure determines that all English NHS Acute Hospitals Trusts have to report their costs for a defined range of HRGs. The NHS Executive is responsible for gathering this information, processing it and publishing it in an annual report classifying trusts based on cost performance in terms of each HRG. This information has been available to all trusts and public scrutiny since 1998, including extensive press coverage.

It is a Governmental intention to relate the cost performed with efficiency. The NRCE seeks to make cost information 'visible' so that managers can "tackle unacceptable variations in performance and raise overall standards across the NHS ... by sharing information and comparing performance" (DoH, 1998, p. 1). Some criticism has been raised in terms of reliability and comparability of reference costs. The reason for this has started to be studied. Wide variations in unit cost for almost every HRG still occur (Northcott and Llewellyn, 2001).

The NRCE was only recently established. It was introduced in 1998 according to the Labour's proposal to make the activities of the NHS transparent and to improve accountability for expenditures. The intention is to converge all trusts to the same cost per procedure and promote national service frameworks.

There is an important intention behind the NRCE, i.e., "the opportunity to identify cost differences and ... understand the reasons behind them" (DoH, 1998, p.1). Also, the NHS Executive suggests that "individual NHS trusts should consider their position on the National Reference Cost Index and discuss with their peers reasons for differences and the scope this may offer for efficiency savings" (Op. cit., p.18). Therefore, it is expected that the difference in the cost information provided by different trusts for the same HRG triggers an investigation to determine and explain its cause. When necessary, the explanations will

provide solutions. The cost information sharing is expected to aid planning and control, by helping trust managers, clinicians and administrators, to work together benchmarking best practice and efficiency.

Chapter summary

The British public health system is largely free at the point of delivery for all citizens. The Government acts as a central regulator, and more than this, hospitals are still owned and funded by it. However, some managerial freedom, e.g. to obtain external income, after the inception of the internal market, can be identified. For example, some hospitals have offered their services to other units. Through external policies Central Government has pushed scientific rationalism in the healthcare system and, consequently, managerialism has permeated into healthcare i.e. the environment has influenced healthcare provision.

Since its inception in 1948 the NHS has undergone reforms. Certainly, the most important reforms are presented in the Figure 2.7 below. At the same time that Central Government exerted its power, the management style was modified and adapted reflecting the external policy. In some respects, the hospital response has influenced policy making, e.g. long waiting lists have caused modifications in external policies.

Figure 2.7 – NHS structure, management style and cost information

Years	Structure	Management style	NHS cost information
1948 to 1982	NHS inception 1974 reforms	Clan based/culture control	Budgetary information Departmental cost control
1983 to 1989	Griffiths' Report	Hierarchy	Specialty cost Management Budgeting Resource Management
1990 to 1996	Internal Market	Market	Cost-based pricing Competition
1997	The New NHS	Co-operative networks	Comparison Reference Costs Benchmarking

Initially cost information had a secondary role in healthcare interventions. However, cost information assumed a central role and grew in importance in the healthcare scenario. Thus, from 1948 to 1982, the healthcare system was considered the domain of a clan/based culture control. The cost information was the traditional budgetary and departmental cost control. In 1983, the Griffiths' Report caused major changes within the NHS strengthening the administrative role and introducing management responsibilities to clinicians. This fact

marked the phase of hierarchy. The NHS had introduced specialty costs and was involving clinicians more in financial management. Following this, the involvement of cost information in governmental policies grew considerably and assumed an important role in the scenario.

Management Budgeting can be considered important mainly because of two elements: the devolving of administrative members to operational areas within the hospitals and the imputation of budget responsibility to clinicians. Thus, the complexity of the relationship between hospital administrative and clinical members became clear.

The Resource Management Initiative necessitated consideration of planning and control. The establishment of coherent measures for input and output provided the dimensions of the processes. Such a situation opened doors for questions related to better use of resources and the evaluation of their use. The involvement of medical and nursing staff in the process was emphasised. It sought to generate, process and disseminate information on medical activity and resources amongst clinical professionals on the one hand, and management on the other.

The White Paper Working for Patients and, consequently, the internal market is significant because of the cost for pricing principles, and the separation of purchaser and provider, which changed the way hospitals obtain funding, among others. At the same time can be mentioned the emphasis given to competition and full-cost as answers to NHS managerial problems. The relationship between purchaser and provider started as being based on one-year contracts and was extended to long-term agreements seeking to restrain management or transaction costs.

The New NHS proposed costs for comparison and benchmarking. The NHS has started the National Reference Costing Exercise. This initiative demanded that all English NHS trusts report their costs, on a consistent basis, for a comprehensive range of healthcare activities. Those healthcare activities must reflect Healthcare Resource Groups and the costs are calculated retrospectively, based on actual costs incurred by trusts. Also, the NICE (National Institute for Clinical Excellence) will encourage clinical progress based on clinical and cost effectiveness. With the emphasis in co-operation, The New NHS promoted the development of a co-operative network in NHS healthcare by modification of the previous market situation.

Chapter 3 - Understanding the healthcare system in Brazil

This chapter adopts the same format used to present the British NHS, see Figure 2.1. Thus, the first section discusses the Brazilian healthcare system. It identifies the formation, development and the actual legislation that regulates the Single Health System[1] (SUS). Secondly, it discusses the management structure and philosophy composing the Brazilian healthcare structure and policy as a whole. Thirdly, it shows the core elements of finance and costs in the Brazilian SUS and hospitals. In this chapter, similarities and dissimilarities between the two countries will be discussed where a contemporary comparison is of particular importance.

3.1 Single Health System Structure

To explain the Brazilian healthcare system is not an easy task. The actual healthcare system resulted from a mosaic of different initiatives for health protection and service providers from public and private sectors at the beginning of the last century. It did not evolve in a clear traceable way like the NHS. Quite the opposite, its history was built up according to the tide in a kind of muddling through. It began as diversified organizations and, to some extent, in a chaotic way, showing a corrupting[2] relationship between public and private sectors.

The history of the Brazilian healthcare system is divided into three distinct phases for this research:

- The Diffuse phase (before 1964); characterised by the emergence of diverse healthcare plans and schemes of private initiatives;
- The Centralization phase (1964 – 1988); when the central government grouped all initiatives under a single institution, centralising administration and policy;
- The Decentralization phase (1988 onwards); when the central government decided on a policy of devolution making each municipality responsible for the healthcare system.

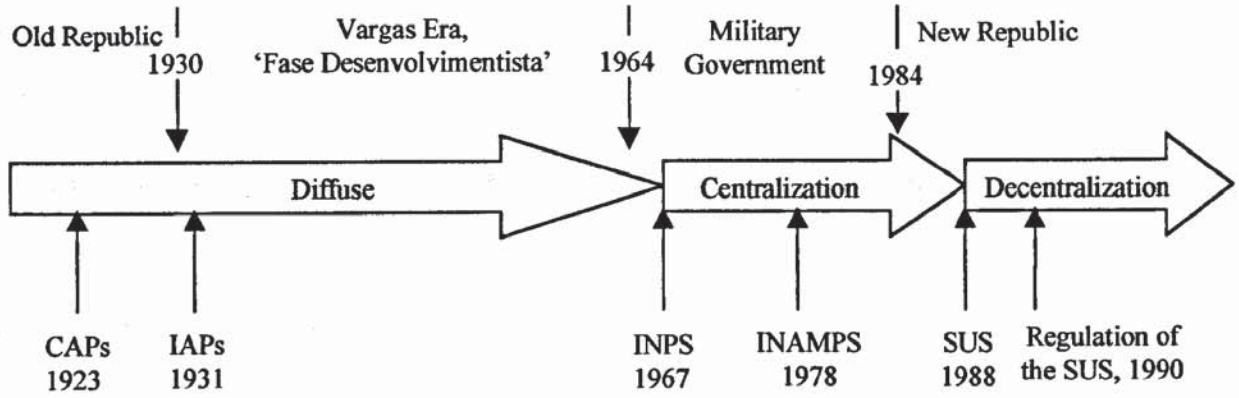
The Diffuse phase of the healthcare system in Brazil had its origins in the beginning of the last century, see Figure 3.1. A visit to the past shows that the Brazilian healthcare was conceived as a system that privileged capital and the forces that underpinned the market

[1] Some authors translate 'Sistema Único de Saúde' as Single Health System. Others use Unified Health System. The first form will be used in this thesis.

[2] For example, private hospitals influence the public sector to obtain public funds, however they do not provide a service to the public in general but only for private or well insured patients.

mechanisms. Therefore, seeking to protect the workforce a considerable number of health insurance plans for employees from the formal[3] sector of the economy arose; and also forms of private social schemes such as mutual societies and brotherhoods emerged. Also, the urban population grew considerably with the end of the slavery and European immigration, at the end of the 19th century and beginning of the 20th respectively, which brought about the aggravation of sanitary and healthcare problems to urban areas.

Figure 3.1 – Phases of the healthcare system and Brazilian governments history



The Centralization phase took place in the Military Government (1964 – 1984), founded in 1967 and lasting until 1988, see Figure 3.1. The military government was known for its rigid centralisation, political repression and strong emphasis on economic growth as opposed to social development. Therefore, those several and diverse insurance plans and social security schemes were abolished and put together in 1967 under the name of National Institute of Previdência Social (INPS), which became the National Institute of Medical Assistance and Previdência Social (INAMPS) in 1978.

The Decentralisation phase occurred in the New Republic period (1984 onwards), with the Constitution of 1998, see Figure 3.1. It was the result of a process started in the mid 1980s, the pressures of groups and other social movements conducted for the creation of Integration Health Activities[4] (AIS), which gave origin to the Unified and Decentralised Health System[5] (SUDS) and finally the Single Health System (SUS).

3.1.1 The Diffuse phase (Before 1964)

The Brazilian 'economy' used to be strongly agricultural. According to the censuses, Brazil was a rural society with two thirds of its population living outside cities at the beginning of

[3] Brazil has a formal and an informal sector of the economy. In the formal sector, the employee is regularly registered and all compulsory taxes apply.
[4] Or 'Ações Integradas de Saúde'

the last century. Economically, Brazil was a country almost exclusively agricultural producing sugar and, afterwards, coffee crops. This scenario started to change with the end of slavery and some industrial development at the beginning of the last century (Merhy, 1987).

The fast growth of the population concentrated in urban areas happened without parallel development in sanitation. The working class was living in precarious condition and striking frequently. The general thought was that, the welfare and health of workers and the urban and rural poor people was not a concern of policy makers. The common thinking was that, in the Old Republic, Brazil was a huge hospital due to the number of diseases and sick people. Little was done in terms of healthcare (Campos et al., 1994). The welfare of the people unable to afford private treatment was largely assumed by brotherhoods such as the Merciful Brotherhood[6].

Also, the mutual aid society throve at that time and several of them still exist today, e.g., the Commercial Association of Minas Gerais[7]. Some of these societies were created to beneficiate emigrants of a certain country. Table 3.1 shows some private schemes available before 1967.

Private companies such as railroads and large industrial firms established company benefit funds. These funds dispensed benefits like those of mutual societies, i.e., some medical care, sickness, accident, or disability aid. The affiliation to this was imposed and was funded by compulsory deductions in wages and fines (Guimaraes and Tavares, 1994).

Table 3.1 – Private Social Protection Schemes

Type	Characteristics	Examples
Brotherhoods	Largely religious	Santa Casa de Misericórdia
Mutual aid societies (1)	Commercial	Associação Comercial de Minas Gerais
Mutual aid societies (2)	Based on nationality	Sociedade Portuguesa de Benficência (Portugal)
Mutual aid societies (3)	Skilled workers	Associação de Auxílios Mútuos da Estrada de Ferro Central do Brasil
Civil servants' associations	Civil servants	Associação dos Servidores da Banco do Brasil
Middle class professions	Specialised professionals	Ordem dos Advogados do Brasil
Company benefit funds – National and International Companies	Compulsory enrolment, railroad and large industrial firms	. Companhia Nacional de Estamparia de Sorocaba (Brazilian company) and . Petropolitana Mill (British company)

Despite the diffuse and numerous institutions, the great majority of workers had nothing but the traditional charitable relief institution to rely on. The massive number of rural workers,

[5] Or 'Sistema Unificado e Descentralisado de Saúde'
[6] 'Irmandade de Misericórdia' or 'Santa Casa de Misericórdia'

about 70% of the total population, was entirely outside of any of these possibilities. This exclusionary, heterogeneous and hierarchical welfare system mirrored the stratified society and economy of this time (Oliveira and Teixeira, 1985).

The attempt to achieve collective healthcare and consequently to care for people that could not afford it, started before the 1930s with the creation of the Retirement and Pensions Fund[8] (CAPs). The law that institutionalised CAPs in Brazil is known as Eloy Chaves Law after the Sao Paulo member of Legislative Chamber who presented the proposal in 1921. Actually, it did not impact too much on the system because it followed the standards of benefits already available through some company funds (Oliveira and Teixeira, 1985; Guimaraes and Tavares, 1994). Companies and workers formed the bipartite base of the system. They had to contribute compulsorily to it. However, the companies independently administered the existing CAPs.

The CAPs extended the range of services, benefits and other medical healthcare to close relatives. Also, they entitled the next generation of the insured to medical assistance. Despite the failure of the CAPs to involve the whole society in a national welfare system, there is a consensus that it promoted its initial discussion. Thus, they started, to some extent, the process for a national social security and healthcare (Oliveira and Teixeira, 1985; Guimaraes and Tavares, 1994).

As can be seen in Figure 3.1, the Old Republic finished in 1930 and the 'Vargas Era'[9] started. In 1931, the CAPs were replaced by the Retirement and Pensions Institutes[10] (IAPs). A difference between the funds and the institutes came from the fact that other occupational groups could affiliate to an already existing institute. These institutes kept the mechanism, which extended benefits to the dependents (close relatives) of the entitled person (Malloy, 1976).

The administration and funding of this new form was proposed as being tripartite due to the involvement of the Government. However, the new form, IAPs, was still seeking mainly actuarial objectives restricting healthcare provision. The Government's influence was strong in legislative and administrative terms but decreased significantly in terms of funding. At the

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[7] 'Associação Comercial de Minas Gerais'
[8] Or 'Caixas de Aposentadorias e Pensões'.
[9] Named after the President Getúlio Vargas.
[10] Or 'Institutos de Aposentadoria e Pensões'

end of the 50's, Government funding was restricted to the bureaucratic operation, i.e. around 15% of total expenditure. At the beginning of the system, the idea was that the components of the tripartite alliance, companies, workers and Government, should share the responsibilities (Oliveira and Teixeira, 1985; Campos et al., 1994; Guimaraes and Tavares, 1994). During this period, the 'Previdência Social' scheme was created. Previdência Social can be considered a concept wider than social insurance. It combines several programmes of social insurance under a single scheme, which became centralised in an institute in the Military Government (1964-1984). Previdência Social is similar to social security though the latter determines universal coverage of the population despite the employment status, which was not the case of the former when it was created (Oliveira and Teixeira, 1985).

Both structure and funding of the Brazilian public healthcare system is intimately related with the Previdência Social development. The social movement involved and attached to the Previdência Social's issues affected internal processes and boundaries of the public healthcare system. The institutions linked to the Ministry of Health today or those ones involved in its proposals were, and still are, subordinated to internal dynamics of the Previdência Social. It is particularly true in terms of funding both collective and individual actions in healthcare (Lyda, 1993). With the Previdência Social started the process of actions based on social-democracy principles of the welfare state, i.e., health is a social right to which every person must have access to all benefits and services (Oliveira and Teixeira, 1985; Campos et al., 1994).

Thus, from the 1950s and beginning of the 1960s an expansion of types of benefits and services occurred together with the number of people covered. The Organic Law of the Previdência Social[11] (LOPS) was the basis of the reforms that occurred during the military regime and the National Institute of Previdência Social[12] (INPS) was established. Simultaneously, the Central Government experienced the end of the populism started with President Getulio Vargas and, the dominant social classes did not welcome an emergent socialism. It was a period of social and financial crisis. A military coup took place in 1964.

3.1.2 The Centralization phase (1964 - 1988)

During the free market economy, which was emphasised with the military coup in 1964, the relationship between the State and social groups changed. The healthcare system made the

[11] Or 'Lei Orgânica da Previdência Social'.
[12] Or 'Instituto Nacional de Previdência Social'. INPS has been explained in this chapter.

medical assistance predominant at the expense of public healthcare as a whole, thus serving the interests of elites. Public institutions were merely subordinated to these interests (Oliveira and Teixeira, 1985).

The National Institute of Previdência Social (INPS) ended the period of diversity centralizing administration of all the healthcare schemes. In line with the centralization and policies of federal institutionalisation adopted by the military government a National System of Previdência and Social Assistance[13] (SINPAS) was established in 1977. In 1978, all existing IAPs were centralised under the National Institute of Medical Assistance[14] (INAMPS) (Campos et al., 1994).

The INAMPS installed a wide net of administrative representations. Therefore, every municipality with some political or economic expression received an office reaching around 600 in the whole Country. This was considered both a violent process and something unprecedented in terms of power and political decision making, which almost completely destroyed the ability of states and municipalities in conducting social policies (Mendes, 1996). Also, it was revealed later that the INAMPS served mainly the capitalist and the corrupted bureaucracy objectives (see, for example, Campos et al, 1994).

The academic output about the population's health condition added to the criticism of the authoritarian centralisation, practiced by the military government, this assumed special importance for transformation of the healthcare system. A chain emerged proposing universalism and unification of the healthcare system's basic components. These proposals echoed within political parties and emerged at the end of the military regime.

At this time the Brazilian healthcare system was still emphatically individual actions on health shaped as medical assistance. The core of the healthcare system was hospital services, offered by the private sector, around which a whole health industrial complex was structured, mainly pharmaceuticals, medical and hospital equipment (Oliveira and Teixeira, 1985; Teixeira, 1989; Mendes, 1996). The result of this process was that the people capable of paying for services, privately insured or protected by the State (civil servants, for example) had wide access to the health system. The others, the "excluded" people were attended by

[13] Or 'Sistema Nacional de Previdência e Assistência Social'.
[14] Or 'Instituto Nacional de Previdência Social'.

public health, and were considered as indigent, marginalized and with restricted access to health care (Teixeira, 1989).

The logic of the healthcare system at that time was that the citizen provided funds to it but this funding was applied to beneficiate the health industrial complex and not the citizen. Also, the contracted sector was organised under the hospital scheme, determining that all problems of public health should be interpreted in individual medical terms. Thus, universal attendance, in individual medical terms, made hospital services increase considerably and this certainly led to increased costs. This policy presented few, if any, impact on social healthcare as a whole. The healthcare structure adopted was based on the mechanisms of private firm, and individual medical assistance. This seems adequate from the market point of view, i.e. living in Brazil without public healthcare policies and poor work conditions increases the demand for medical attendance, which increases the demand for private hospitals and doctors. They permanently had a large number of 'client-patients' and were fully booked throughout the year. Nonetheless, there was a limit on the public funding and this was reached quickly. Also, poor results for the population as a whole were realised.

General Geisel's Government brought alterations to the existing healthcare structure basically as a result of union movements and groups of salaried doctors. They criticised the absolutely private, profit seeking model, and its low collective efficacy. The fact that the system was controlled by Government's institutions was also criticised. This caused overlapping conflicts of competence, uncontrolled public expenditure and lack of management (Oliveira e Teixeira, 1985; Mendes, 1996).

This period staged several transformations. On the one hand, a movement in the direction of the institution and political unification took place. On the other hand, a rearrangement of dichotomies such as private versus public and individual assistance versus collective actions occurred. However, due to free market forces, the existing model emphasising medical action was not abolished.

3.1.3 The Decentralization phase (1988 onwards)

The 80's decade can be considered rich in terms of transformations in the Brazilian healthcare system. These transformations were linked directly with the political and institutional evolution in the Country. This period contributed to the end of the military regime with the

first direct election for president in 20 years. A new Constitution was elaborated, the fifth overall, called Citizen Constitution[15] due to the wide social and democratic guarantees it facilitated.

An important fact related to the Brazilian health system as a whole took place in the 1980s, which was called Sanitary Reform[16]. This movement is seen as being responsible for the foundation of the idea of the Single Health System (SUS). This movement also marked the end of a period in which access was based either on the status or the contributions of the insured person to the social security system or the level of poverty whereby the Government bodies provided healthcare to the poor and indigent. Representatives of this movement defended universal and equitable access to a healthcare system based on citizenship (Oliveira and Teixeira, 1985). It was also created the Ministry of Previdência and Social Assistance[17] (MPAS). The public policies acquired the characteristics that would influence significantly the transformations, which would start in 1988 (Mendes, 1996).

The movement of transformation of the health sector, centred in principles of universalism of access to the services and managerial devolution, can be understood as being associated to the democratisation process of the Brazilian society in the end of the 1970s and beginning of the 1980s. Summarizing, the Brazilian health system at the beginning of the 1980s presented the following characteristics:

a. Financial and operational decision-making at the Central Government level was centralised in the INAMPS, which assumed all policies in the sector.
b. The form of capitation was dangerous. Money did not come from government budgets but from social contributions, which is vulnerable to economic crisis. Contributions would fall if unemployment or the black economy grew.
c. The healthcare system assumed several facets, which crystallised separately, i.e. private medical attendance or medical out-patient attendance or hospital in-patient attendance were not integrated.
d. The private sector was privileged regarding the provision of services.
e. The deterioration of the sector's public structure was apparent.
f. The increase in hospital equipment was promoted without regard to a fair distribution of these facilities and the necessities of the population.
g. Services were extended to other groups of the population without adequate planning.

[15] Or 'Constituição Cidadã'.
[16] Or 'Reforma Sanitária'.

h. The healthcare system was considered to be predominantly 'hospital-centred'. There was no central policy or integration with primary care.
i. It was considered ineffective in terms of primary healthcare provision.
j. Given these characteristics, any planning, control, and evaluation became almost impossible (Oliveira e Teixeira, 1985; Campos et al., 1994; Guimaraes e Tavares, 1994; Mendes, 1996).

Among the attempts to have these problems sorted out the Integrated Actions of Health[18] (AIS) was elaborated. With the presence of Waldir Pires in the MPAS, the AIS won national expression in an effort to implement the social program of the democratic transition. The AIS had as objectives the universalism of the healthcare attendance, the integration of the actions to supersede the classic dichotomy of prevention versus cure, and the unification of all services of medical attendance. The AIS had little expression at the beginning of the decade, mainly because it was inappropriately funded. However, it survived and strengthened with the reestablishment of the democracy, in the New Republic, in 1985 (Guimaraes and Tavares, 1994). At the end of 1985, 644 municipalities were registered in the AIS programme and the number reached 2500 at the end of 1986 (Guimaraes and Tavares, 1994).

The AIS played an important role in the demystification of the ever-reiterated incapacity of states and municipalities in managing and organising the healthcare system according to their own necessities (Campos et al., 1994) largely diffused by the INAMPS. Also, They promoted the expansion of the public net, above all the ambulatory capacity and contributed significantly to the institutional articulation. However, despite considerable success in several municipalities, the AIS were unable to end the overlapping of actions, the managerial multiplicity and the centralization of decision–making in the Federal sphere. The complete development of the AIS did not happen because of the strong opposition posed by INAMPS' offices already installed in municipalities. The INAMPS kept its wide power of interference in healthcare, principally, monopolising the relationship with the private sector (Campos et al., 1994). However, issues of public healthcare began to be part of the political agenda reaching a national scale.

[17] Or 'Ministério de Previdência e Assistência Social'.

[18] Or 'Ações Integradas de Saúde'.

Progressively, President Jose Sarney as the first civil president after the Military Government (1964 – 1984), created the Unified and Decentralised Health System[19] (SUDS) (Decreto 94.657, 20 July 1987) seeking the consolidation and the qualitative development of the AIS.

The preceding Ministry of Health and Previdência and Social Assistance (MPAS) was divided into two: the Ministry of Health[20] (MS) and the Ministry of Previdência and Social Assistance[21] (MPAS). They started a series of actions of healthcare management devolution to the states and municipalities' level (Campos et al., 1994; Mendes, 1996).

The SUDS proposals were: universalism and equity of access to the healthcare services, devolution of the management and action involving healthcare, implementation of sanitary districts, development of institutions with collegiate management, and development of human resources (Guimaraes and Tavares, 1994). Such directives sought to confirm the concepts relative to the democratisation of access to healthcare services, abolishing the diversified categorisations of citizens and organising the healthcare network under appropriate technical standards from primary care.

The SUDS became SUS with the Federal Constitution of 1988 (Brazilian National Congress, 1988). The SUS was defined as being a group of actions and public services that integrate a regional and hierarchical network, organised in accordance with the following directives:

1. Decentralisation, with unified direction by each government layer;
2. Integral attendance, giving priority to preventive activities, without loss to the medical attendance service;
3. Active participation of the local community.

The direction of the SUS, in each governmental sphere, is responsibility of the Executive Power[22] and Health Council (Law N° 8.090/90 and Law N° 8.142/90).

It is important to note that the president elected in 1989 was strongly supported by the industrialists, which includes the medical sector. It was considered a defeat to the reformists who supported the SUDS unconditionally. Just to give an overview, two years passed between the enactment of the National Constitution and the presentation of the Organic Law of Health, which regulated the action of the, since then and on, called SUS. Despite the

[19] Or 'Sistemas Unificados e Descentralizados de Saúde'.
[20] Or 'Ministério da Saúde'.
[21] Or 'Ministério da Previdência e Assistência Social'.
[22] According to the governmental level it can be Ministry or Secretary.

incorporation of the INAMPS by the Ministry of Health and the replacement of SUDS for SUS in the terms of denomination in the contracts, all characteristics of the SUDS remained valid. The form and principles of the SUS was regulated only in 1991 (Basic Operational Rule – SUS 01/91).

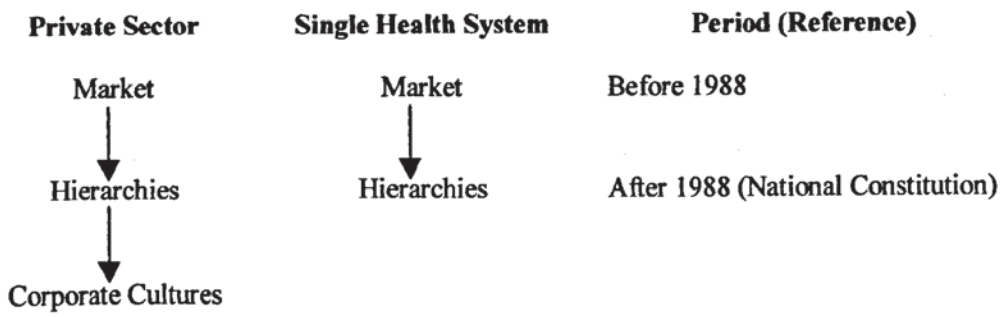
The 1990s were characterised by an aggravating fiscal and economic crisis in the Country. However the medical, pharmaceutical and private hospital sectors were still strong. In such a situation, social groups with less integration and representation in the formalized sectors of the economy suffered major losses. Thus, the SUS has survived, in a precarious way and unaccredited by the population (Guimaraes and Tavares, 1994). For those people that work and are in the age considered of good health the availability of alternative or supplementary healthcare, medical attendance and plans of health of private nature has increased.

3.2 Hospital Management – style/approach

The past influenced actual hospital management structure and philosophy. To give an idea, Merciful Brotherhoods hospitals have their chairmen still appointed by the Catholic authority today, this is not a choice based on the administrative ability.

As seen, medical practice has developed based on market rules according to patterns of capitalist rationality highlighted by efficiency and it is understood as being the positive relationship between production and costs. The market, with its "invisible hand" is expected to organise the mechanisms of demand and supply. Using the scheme presented in Figure 3.2, one can explain that the Brazilian health system has progressed from market to hierarchies, this is comparable to the private sector, but it is still keeping strong market privileges (Lapsley, 1993).

Figure 3.2 – Periods of the main modes of coordination in the Single Health System – Brazil



Note: This figure only shows the emphasis given by political and economic processes.
Source: adapted from Lapsley, 1993.

The market that occurred in Brazil is not similar to the British internal market. The differences are, among others, that the British internal market was oriented and controlled by Governmental directives and policies. In contrast, the Brazilian market has evolved somewhat independently from the central Government. Only in 1988 did the central government attempt to interfere with the market situation. In part it is because of the decentralisation proposed by the SUS. Also, Brazil has never combined the functions of purchasers and providers. In terms of Brazil is more convenient treat these functions as payers and providers. Finally, Brazilian Government has not promoted health service provision through a budgetary allocation system.

The similarity with the British situation can be posed in terms that Brazilian public hospitals are semi-autonomous. The SUS determines that the three Governmental spheres are responsible for provision of human resources, which are civil servants with employee stability. They are also responsible for supplies/consumables and equipment, nonetheless, strict national laws define the procedures involving these essentials (Costa et al., 2000). In Great Britain, the central Government is solely responsible for healthcare provision and hospital management has an invigilated freedom.

The Brazilian government and providers tend to disguise the presence of market mechanisms in the healthcare system. The free competitiveness between health providers, such as hospitals and individual doctors, is transformed into the free choice of the 'client-patient'[23] for medical and service provision. Also, most of the responsibility for the treatment goes to the patient (or client) because the provider was his or her own choice. Any problem arising is a patient's fault due to his 'inability' to choose the right service provider or doctor. The ability to hide the medical practice commercialisation can also be observed when doctors invoice the 'client-patient', i.e., they call it medical honoraries (Campos et al., 1994). In Britain, the central Government assumes the responsibility for the treatment and the patient does not exercise his own choice.

This operation, veiling the real market face of the medical practice, has been done through the history of the healthcare system. This seeks to carry on the human appearance of the medicine keeping its outline of a sacerdotal practice. This situation hampers the study of the market mechanisms that regulate hospital management in Brazil.

[23] In Brazil, it is usual doctors referring to their patients as clients strengthening the market relationship.

In Brazil, the government's intervention in the health system has increased and was built upon a new basis, but, this was done respecting already installed medical "modus operandi"; which followed vicious market mechanisms. New basis meant that different conditions were created for the very same accumulation and production. These new conditions were possible due to a State 'intervention' such as financing the construction of new hospitals, public and private, and the acquisition of equipment emphasising the medical dominance (Costa et al., 2000). It is important to notice that the State also bought, and it is still buying, medical assistance from hospitals thereby contracting services from the private sector. The State assumed this role without being directly responsible for the health system management. However it can be considered a first step for the hierarchy phase, see Figure 3.2.

In such circumstances the medical market as a whole was modified but the mechanisms of health services provision remained unchanged. The private hospitals chain was extended as well as the number of 'clients-patient'. The latter occurred due to the inclusion of the worker and his family in the market and it was no longer available just for the individual with particular purchasing capacity. The charity, philanthropic and mutual society hospital chains were incorporated into the market. The government accredited all of them for health services provision. Their structure and internal administrative organisation was adapted, in the main characteristics, to those practiced by private hospitals.

This situation demanded from the hospital managers the adoption of new procedures, independently of their origin as private or public. However, despite changing the hospital management characteristics, the process did not cause profound alteration in the traditional individual medical practice. There was still present a composition of interests: doctors as individual workers, the 'not public'[24] hospitals and the government.

The management of this vast and diverse network of hospitals providing individual medical attention and particular surgeries, which absorbs more than two thirds of the whole Brazilian investment in health, is still obeying typically market rules and values (Campos et al., 1994, p. 17). The main administrative focus is the financial/stewardship and the main objective is to balance or, better still, provide a surplus of income over expenditure after the doctors' payment.

[24] Called this way the not-for-profit, charitable, philanthropic and other possible forms.

According to the above discussed, the first managerial choice is 'a surplus of income over expenditure after doctors payment'. In private hospitals this means that managers are involved in policies to attract more 'particular' and well insured patients and selecting which cases should be accepted from SUS. A rigorous "accounting" is provided. The quotes mean that private hospitals have two or more accounting systems, which is supported, to some extent, by the contingency theory (see Schweikart, 1992; Geiger, 1999). It is well known, that one accounting system provides information seeking to fulfil government and other environmental conditions, such as taxation. Other accounting system exists internally and the clan strictly controls it.

In terms of public hospitals, Campos et al. (1994) assertion means that that the clan expects compensation, even if it is not financial at the beginning, above salaries. This compensation assumes several forms, e.g. free access to the best available material and equipment, name divulged to more people, which means more attendances 'particular' and health plan in private surgeries (or even within the public hospital).

Thus, to accomplish this commitment, the domain of actions within the hospitals should lay in clan members' hand. This means that, from the manager from a non-clinical background is imposed no-participation and no-intervention in any financial, technical or political issue involving healthcare within the hospital (Campos et al., 1994).

Looking at it this way, it is supposed that it would not be necessary for professionals to undertake any form of planning and control or even assess any action on healthcare or hospitals. However, due to imperfect market mechanisms, these functions have been improved in the sense of attracting more 'client-patients'. It started in the private sector and contaminated the public sector. Some managers have declared explicitly in favour of attending 'particular' and private insured people in public hospitals. This strategy is called "double entrance" meaning that SUS patients use one access and payers use other (Costa et al., 2000, p.437).

This 'private way of healthcare' consolidated an administrative knowledge within the hospitals. Thus, each hospital can be seen as an independent unity isolated from the rest of the healthcare system, like islands, 'competing' with the other units[25] (Costa et al., 2000). This

[25] Sometimes, this competition implies in one public hospital pushing a patient that consume many resources and is badly reimbursed, to another public unit.

system privileges scientific-rational mechanisms putting hospitals as production units facing environmental competitiveness and trying to develop accounting systems to improve the management of their various "product lines" (Kim, 1988; Covaleski et al., 1993). They are competing for 'particular' and insured clients-patients and trying to attract the maximum possible of public funds. In such a context is possible to challenge the humanitarian characteristics of the medical practice.

3.3 SUS Cost Information

Funding the SUS is the responsibility of the three governmental spheres: Federal, State and Municipal, being ensured by the Federal Constitution (Art. 194 and Art. 195). The Central Government is responsible for around 60% of the public resources applied in health in 1995, municipalities and states contribute with 25% and 15% respectively (Fleury et al., 2000).

The Social Security has the main bulk of its money coming from general taxation like Great Britain and also, the compulsory contribution on salaries. This contribution is made of compulsory contribution of employers and employees, which is taken directly from the salary list.

The Social Security and National Health Fund are Federal accounts. The resources are transferred from the Central Government to states and cities based on previous presentation of the Integrated Programming Pact[26] (PPI) discussed ahead in this section. This document is elaborated by Local and State authorities through intergovernmental commissions. Municipal Health Council and State Health Council must approve the document.

3.3.1 Funding the Health Systems

Table 3.2 provides some initial basic indicators of Great Britain and Brazil. Figures show that British population is approximately one third (37%) of the Brazilian one. In Britain, 45% of the population was working in 1999 and in Brazil 53%. In terms of Unemployed people the Brazilian rate was 7.6% and the British was 4.5%. Britain is 35 times smaller than Brazil in area. This causes a high demographic density, i.e. 242 people per square kilometre, which is 13 times bigger than the Brazilian. The Brazilian demographic density is responsible for a scattered hospital chain. Other factors such as market attractiveness and political criteria,

[26] Or 'Programa de Pacto Integrado'

normally based on populism, aggravate even more regional discrepancy. In contrast, Great Britain has a defined policy for hospital structure and location criteria since the 1960s with the Hospital Management Committee and subsequent creation of the District General Hospital model.

Table 3.2 – Great Britain and Brazil, initial basic indicators

	Great Britain	Brazil
Population (1996)	58,801,000[27]	157,070,000[28]
Area (sq km)	242,910[29]	8,547,403[30]
Density (persons per sq km)	242	18.37
Employment (1998)	26,900,000[31] or 45.0 %	53.0 %[32]
Unemployment (1998)	1,800,000[33] or 4.5 %	7.6 %[34]

It is a fact that, in health services, neither there is neither a fixed quantity of diseases (as was supposed) nor that people getting healthier would reduce the money spent in healthcare, but rather, there is a potentially infinite demand (Thwaites, 1987). These demands have their roots in some basic elements such as demography, technology, society, economy and environment (Le Grand et al., 1998), which explain some basic aspects of the contingency theory. Changes in these factors, though difficult to precise, has varied each year and increased the pressure on the healthcare funding in both countries.

The Brazilian healthcare system can be divided into two categories. The first category is the SUS or the public one. It is compounded of public providers and comprises all hospitals and primary health centres, which were originally from the Federal, State and Municipal spheres. It also contains private for-profit and not for-profit providers and independent physicians and laboratories under contract to the public system, see Figure 3.4).

The second category includes private plans with voluntary affiliation, pre-paid health insurance and pre-paid plans. This category is the Supplementary Health System in Brazil.

Table 3.3 shows that in 1998, the SUS covered 75% of the population providing that around 25% were using private coverage and, therefore, not the public health system[35]. It is known,

[27] http://www.statistics.gov.uk/stats/regional/reg_pop.htm; (18/02/2000)
[28] http://www.ibge.gov.br/ibge/estatistica/populacao/contagem/brcont96.shtm; (18/02/2000)
[29] http://www.statistics.gov.uk/stats/regional/reg_pop.htm; (18/02/2000)
[30] Financial Times, Tuesday, November 2, 1999.
[31] http://www.statistics.gov.uk/stats/ukinfigs/employ.htm (18/02/2000)
[32] http://www.ibge.gov.br/ibge/estatistica/populacao/condicaodevida/indicadoresminimos/tabela2.shtm#a33; (18/02/2000)
[33] http://www.statistics.gov.uk/stats/ukinfigs/employ.htm (18/02/2000)
[34] Financial Times, Tuesday, November 2, 1999.

however, that some of these private insured people have a quantity of restrictions in terms of service access thus, sometimes, they have to use the public service. Official data informs that the affiliation to private health companies reached 39 million people in 1998. They are usually formal employees from industrial and service sectors entitled via the companies they work for or yet families or individuals that contract directly the private insurance company[36].

In terms of Great Britain, the number of private health subscribers increased in the 1970s and 1980s. Ham (1999, p. 34) set out "by 1989, the number of people ... covered by private insurance totalled over 6 million, around 11% of the population" (see Table 3.3). At the same time it was increased the number of private hospitals both non-for-profit and for-profit. The expansion of private insurance contributed to increase the number of beds offered by private hospitals as well. In 1988, there were 200 private and voluntary hospitals in England being responsible for 7% of the acute beds (Ham, 1999, p. 35).

The Organization for Economic Co-operation and Development (OECD, 2001[37]) presents that the total expenditure on health relatively to private insurance is 3.5% of the total. A similar number is given by the World Health Organisation (WHO, 2000).

Table 3.3 – Population attended by public and private healthcare

Country	Public	Private	Total
Great Britain	89.0%	11.0%	100.0%
Brazil	75.0%	25.0%	100.0%

3.3.2 Funding the public healthcare system

As posed before, the three levels of government are responsible for the SUS: the Ministry of Health and the State and Municipal councils, as well as their respective secretariats. The interrelationship between these different levels is attributed to inter-management commissions.

The SUS is financed from the social security budget. This budget is made up of compulsory contributions by employers and employees, general taxation through Federal, State and

[35] http://www.ibge.gov.br/ibge/estatistica/populacao/trabalhoerendimento/pnad98/saude/sb04_1.shtm; (18/02/2000).
[36] http://www.ibge.gov.br/ibge/estatistica/populacao/trabalhoerendimento/pnad98/saude/sb04_1.shtm; (18/02/2000).
[37] http://www1.oecd.org/els/health/software/fad.htm; (18/02/2000).

Municipal budgets and other sources. However, the National Constitution did not define the amount of resources that should be passed to the SUS. The Budget Directives Law[38] (LDO) has defined it as being at least 30% of the 'Previdência Social' budget. According to Fleury et al. (2000), this minimum has not been met since 1993. This deepened the crisis in the sector. And since then, the SUS has relied upon extraordinary contributions and transfers from the Central Government to cover its budget, which represented 60% of its total resources in 1995 (Fleury et al., 2000). A special tax of 0.38% of all banking transactions was imposed in 1996, which is called Provisory Contribution on Financial Movement[39] (CPMF) as an attempt to solve the problem and also states and municipalities have increased the allocation of their own resources to finance the SUS.

Brazil's Central Government expenditure in health was 1.71% of the GDP in 1996. All public expenses on health were estimated at 3.17% of the GDP (see Table 3.4). The Brazilian SUS share of total public expenditure was estimated as being 4.60%. In 1999 the expenditure of the Central Government rose to an estimated 1.97% of the GDP.

Table 3.4 – Main indicators – Brazil[40]

Year	GDP (Million R$)	Population (1,000 inhabitants)	Federal expenses with health in percentage of GDP	Federal expenses with health in percentage of total public expenditure
1996	778,887	157,070	1.71%	3.17%
1999	963,869	167,910	1.97%	

Obs.: 1996: £ 1.00 = R$ 1.72 and December 1999: £ 1.00 = R$ 2.99 (htttp://www.oanda.com/convert/fxhistory)

The distribution of public expenditure on public health in Brazil is shown in the Table 3.5 below. Considering the Brazilian Real of 1998, the investment in public health has kept in the same level between 1996 and 2000. However, it can be seen that the municipal participation has increased in opposition to the Federal and State comparing 1994 and 2000. It can be a reflex of the policy of decentralisation. The Central Government share has kept constant.

Table 3.5 shows the incapacity of the Central Government in carrying out its duty regarding what is determined by the Federal Constitution in terms of health.

[38] Or 'Lei de Diretrizes Orçamentárias'

[39] Or 'Contribuição Provisória sobre Movimentação Financeira'

[40] Sources: IBGE, Diretoria de Pesquisas, Departamento de Contas Nacionais População, in http://www.ibge.gov.br/ibge/presidencia/noticias/041102000.shtm and Health Ministry, in http://www.datasus.gov.br/cgi/tabcgi.exe?idb98/e07.def, and http://www.saude.gov.br/doc/GG99NOV.xls, 09/05/01.

Table 3.5 – Public expenditure on public health – SUS

Governmental Sphere	1994		1996		2000	
	Value	%	Value	%	Value	%
Federal	14.7	60.7	15.0	53.7	16.2	58.3
State	5.4	22.0	5.2	18.5	4.8	17.4
Municipal	4.2	17.2	7.7	27.8	6.8	24.3
Total	24.3	100.0	27.9	100.0	27.8	100.0

Source: 1994 and 1996 – IPEA/DISOC; 2000 – Ministry of Health (estimated)
Value in R$ billions of December 1998 (US$ 1.00 = R$ 1.20)

Comparatively, the NHS budget depends essentially on two elements: the state of national economy and government decisions about running programmes. Some constraint issues have always been present such as inflation and governmental initiatives or actions to control public expenditures, which have led the government to impose cash limits and strict financial discipline within the NHS.

NHS money comes from three sources: general taxation, about 80%, NHS insurance contribution, usually more than 10%, charges and other receipts, usually less than 10%. Figure 3.3 shows the sources of the NHS in 1997/1998.

Figure 3.3 – NHS finance, 1997/1998

General taxation	82.0%
Insurance	12.0%
Charges and other receipts	6.0%

Source: adapted from Ham, 1999.

NHS funding jumped from 3.5% in 1949 to nearly 6% of the GDP in 1996. Gross expenditure in the NHS has continued to grow in real terms by an estimated 6.8% rate over 1998/99, see Table 3.6. The Total Expenditure in the NHS in 1999/2000 reached £43.354 billions (CIPFA, 2000).

Table 3.6 – Main indicators – Great Britain

Year	GDP (Million £)	Population (1,000 inhabitants)	Government expenses on health as percentage of GDP	Government expenses on health as percentage of total public expenditure
1996	730,767[41]	58,801.5[42]	6 %[43]	14.5 %[44]
1999	747,544[45]	59,500.9[46]	6 %[47]	

[41] Source: http://www.statistics.gov.uk/stats/ukinfigs/economy.htm, 18/02/00
[42] Source: http://www.statistics.gov.uk/stats/regional/reg_pop.htm, 18/02/00.
[43] Source: Ham, 1999, p. 73.
[44] Source: Ham, 1999, p. 72.
[45] Source: The Stationary Office Ltd (2000). Whitaker's Almanack 2001. 133rd ed. The Stationary Office Ltd..
[46] Source: http://www.statistics.gov.uk/popest_mid99.asp, 10/05/01.

The NHS expenditure has been divided basically into capital and current expenditure on hospital and community health services, and current expenditure on the family health care, see Table 3.7. Also included, are relatively small expenditures on departmental and health authority administration and central health and miscellaneous Services.

Table 3.7 – NHS budget, 1997/1998

Accounts	%
Capital and current expenditure on hospital and community heath services	69
Current expenditure on the family health services	24
Departmental administration	1
Central health and miscellaneous services	2
Health authority administration	4

Source: DoH (1998b)

A breakdown in the hospital and community health services shows that the largest share of expenditure in 1997/1998 went on acute services (49%) followed by services for elderly (11%) and mental health (11%) (DoH, 1998b).

The distribution of family health service expenditure shows that the biggest proportion of the budget 1996/1997 went on pharmaceuticals (50%) followed by payments to general medical service (32%), general dental services (15%) and ophthalmic (3%) (ibid.). In the NHS, the largest single item of expenditure is staff salaries and wages, which comprises around two thirds of the total. Nurses and midwives and health visitors are almost half of the staff.

Treasury has controlled NHS funding. With the creation of the internal market, NHS trusts started looking for private resources. At the beginning private participation was restricted to minor NHS issues such as car parking and incinerators, today it involves rebuilding wards and, sometimes, the whole hospital under private finance initiatives

In Brazil, due to the principle of decentralisation, public expenditure follows the local governments criteria. In general, funds are passed from the Central Government directly to municipalities. The idea would be to eliminate the State intermediation, which is almost impossible given the dimensions of the country and the large number of municipalities. Decentralisation involves intergovernmental liaison in terms of resource allocation, planning, quality assurance, technical supervision and human resource planning. It is quite impractical to think that intergovernmental integration can ignore the state level (Collins et al., 2000). Other problems faced by the decentralization process are inequities between municipalities,

[47] Source: Obtained through the expression 43,354/747,544*100 = 5.799 %.

which could be increased even more. And also, several municipalities in Brazil are too small and have difficulties developing local health systems, and they probably are short of political and technical capacity to regulate the local private providers.

However, due to the SUS inception, there has been a gradual and progressive process of decentralisation. The process started with the Basic Operational Rule[48] (LOB) of 1993. This proposed the graduation of municipalities in three categories, which lead to the transference of responsibility to each municipality:

1. Semi-full management: municipalities have more control over the private sector linked to the SUS. Resources are transferred directly from the Federal and State spheres directly to the Municipal Health Fund. The municipality is completely responsible for its use.
2. Partial management: the municipality has some control over the SUS contracted units, even though the latter are still receiving payments from the Central Government.
3. Incipient management: there is no control over the SUS contracted units. The municipality forms a Municipal Health Council and creates a Municipal Health Fund that separates health resources from the other public resources.

This classification varied from state to state, though the procedure adopted is slightly similar, i.e. based on previous expenditure through SUS. In 1996, around 63% (or 3,127 from 5,507) of the Brazilian municipalities were classified. Although only 144 municipalities were considered as 'semi-autonomous management' they involved the major urban centres and consumed almost 30% of the national transfers within LOB 93 (SAS, 1996), see Table 3.8.

Table 3.8 – Categorisation of municipalities according to the LOB 93, 1996.

Management category	Number of municipalities	%
Semi-full	144	4.6
Partial	616	19.7
Incipient	2367	75.7
Total	3127	100.0

Obs.: In 1996, 3127 corresponded to about 63% of the total municipalities of the Country.
Source: adapted from Collins et al., 2000.

A new LOB edited in 1996 shortened the classification to two management categories:

1. Complete management of primary care;
2. Complete management of the municipal health system.

[48] Or 'Lei Operacional Basica'

The municipalities should be classified, at least, in the preceding 'incipient management' category to be considered in this new LOB. The stated difference is the municipal capability of management of just the primary care or the full health system. The number of municipalities classified as 'complete management of basic care' was substantial, i.e. 67% of all municipalities (3700 in May of 1998), see Table 3.9. The other 412 municipalities were classified as 'complete management of the municipal health system', i.e. 7% of the total (Fleury et al. 2000).

Table 3.9 – Categorisation of municipalities according to the LOB 96, 1998

Management category	Number of municipalities	%
Complete management of primary care	3700	67.0
Complete management of the municipal health system	412	7.0
No management of healthcare	1445	26.0
Total	5557	100.0

Source: adapted from Fleury et al. 2000.

3.3.2.1 Funding the municipalities

In Great Britain, hospitals (NHS Trusts) are funded directly by the Central Government via NHS Executive regional offices, health authorities and Primary care groups or, more recently, trusts. In Brazil, the Local Government receives all the resources in respect of the municipal category. Thus, the transfers from Central Government are essentially:

1. Primary Care Program[49] (PAB); and,
2. SUS, for payment to providers for instances of care provided and are received by public and private hospitals and outpatient clinics.

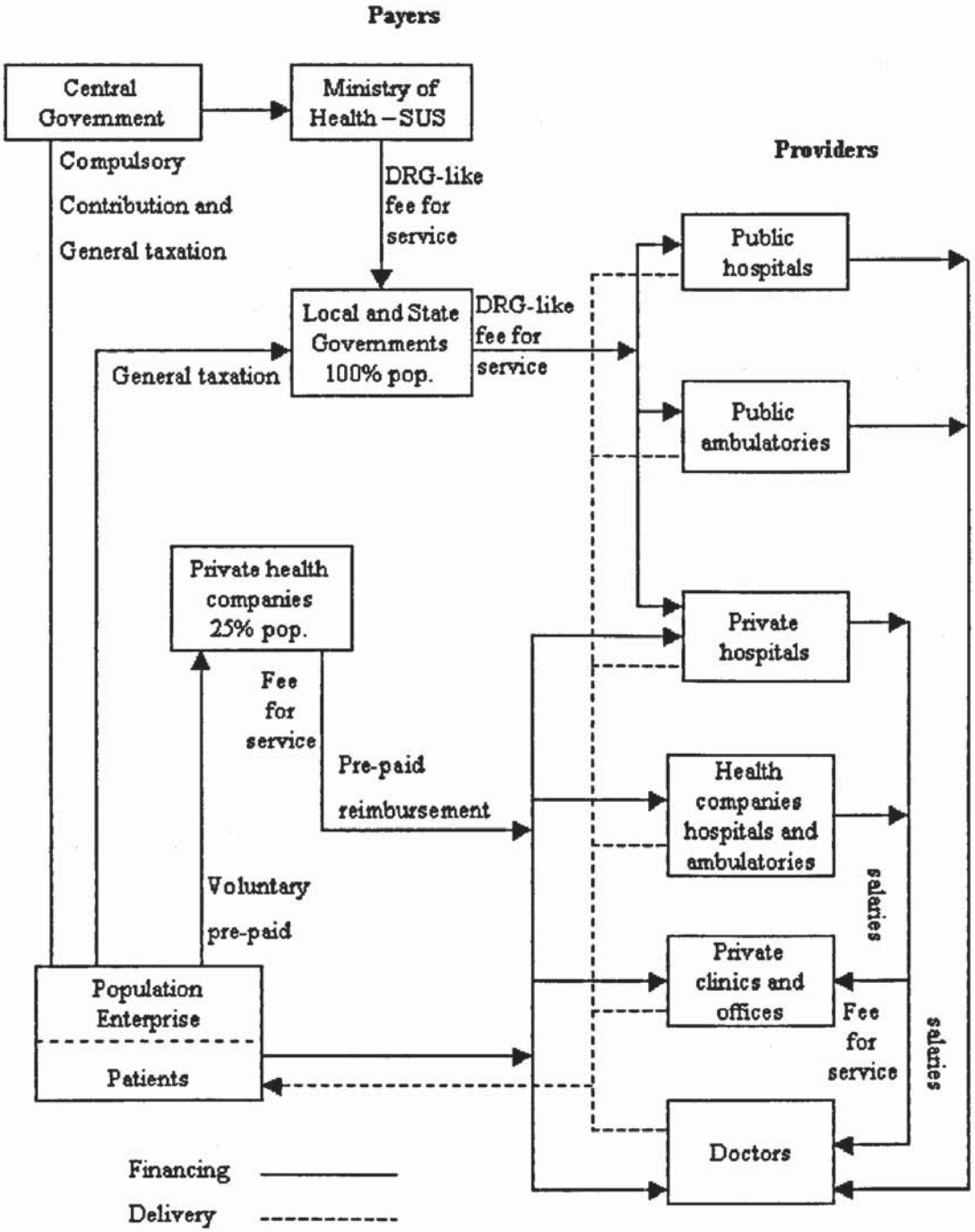
The first one or PAB is a mechanism of periodic (monthly) transfers of resources from the National to the Municipal Health funds registered according to the LOB 96.

The second one is the public contracting system and corresponds to the SUS. As shown in Figure 3.4, the Brazilian health system can be divided into payers and providers. The funding of the system is still coming essentially from the National Health Fund as seen in Table 3.5. Relatively to the public system of contracting the three levels of government are both payers and providers.

[49] Or 'Programa Assistencial Básico'.

The payments to providers are channelled through the Local and State governments. They receive funds from the Ministry of Health and pass the resource to the providers, i.e. public and contracted private hospitals and public ambulatories. These providers pay salaries to doctors. Private hospitals can also contract to provide private clinics and offices (surgeries).

Figure 3.4 – Brazilian health system, 1990s



Source: adapted from Fleury et al., 2000.

The method of payment for services provided is direct transfers to the providers, public or private. Fleury et al. (2000) summarised:

> "for services relating to hospital stays, highly complex procedures, and ambulatory services, especially office visits. Payment for hospital stays and highly complex procedures are based on the Autorização de Internação Hospitalar (AIH, hospital stay authorization), a system similar to the diagnostic-related

groups (DRGs) in the United States. The procedures are based on the United Nation's International Disease Classification. Fixed values are established according to the diagnosis and required procedures. Hospitals where highly complex procedures are carried out are paid extra to maintain their structures. Payment for ambulatory services is based on Unidades de Cobertura Ambulatorial (UCAs, ambulatory care units), as well as a fixed amount for each service".

Figure 3.4 also shows that doctors are a final point in the system. All the payment arrows converge on them, which gives an idea of the power exerted by this class and the resistance it exercises to maintain existing circumstances.

3.3.3 Cost Information in the Brazilian healthcare system and hospitals

Brazilian public hospitals are at an early stage in terms of information technology and cost information (see Rodrigues, 1988). Some factors can be considered, to varying degrees, responsible for the current condition of cost information for public hospital services in Brazil. Figure 3.5 shows some of these factors and how they impact on the two types of service providers.

Figure 3.5 – Factors that affect cost information development

	Public Hospitals	Private Hospitals
1. High Inflation Rates until 1994	High	Low
2. Government's Single Payment Table	High	High
3. Market Competition	Low	High
4. Delays in Public Budgeting	High	Low

Among these factors, certainly the first one, i.e. high inflation rates can be detached. Brazilian inflation had its origins in the oil crisis of the 1970s and, in an ever increasing process, reached a rate of 80%per month, see Table 3.10. Brazil experienced, in addition, a decrease in the GDP. This was so problematic that the 80's decade in Brazil is known as the 'Lost Decade'. Private hospitals knew how to overcome or mitigate problems brought about by the high inflation rates, i.e. practicing budgeting in US dollars and continually readjusting their prices. Such practices were not allowed for public hospitals.

Several Government's economic plans were implemented seeking to extinguish inflation: 'Cruzado Plan', 'Verão Plan', 'Collor I Plan', 'Collor II Plan' and 'Real Plan'. Inflation had always made any serious work on generating cost information or budgeting difficult.

The problem of inflation was solved under Itamar Franco's Government, who assumed the Brazilian Government after Collor's impeachment in 1993. He was responsible for the 'Real Plan' implemented in June 1994. The president who succeeded him was Fernando Henrique Cardoso, the former Financial Minister. Since 1994, inflation rates in Brazil have been lower than 5% a year.

Table 3.10 – Inflation rates in Brazil per year

Years	Inflation Rates (accumulated %)
1988	1,035.6
1989	1,782.9
1990	1,276.6
1991	480.2
1992	1,157.9
1993	2,541.0

Source: adapted from Guimaraes e Tavares, 1994.

This inflation control made it possible to produce cost information and develop regular budgeting processes within public hospitals. However, most of them are still based on private models and so, profit-minded and scientific rational. The public system is still struggling with adapted models of the top-down approach.

Since 1997, some public hospitals started to improve their own method of costing using a bottom-up approach and principles of Activity Based Costing (ABC) at product level based on elements of DRG-like services, see Figure 3.6. The result has been a case-mix cost where the minimum and maximum cost for each treatment inside the same hospital is revealed. It has been possible to compare, yet in a very early stage, the costs of certain DRGs between different hospitals (Goncalves et al., 1998).

Figure 3.6 - Accounting choices in Brazil

Product Level	Cost Approach	Techniques
. DRG-like . Patient	. Full cost . Marginal cost	. Traditional styles of apportionment . Complex – ABC

Source: adapted from Ellwood, 1996a.

The second factor concerning cost information development is the Government's Single Payment Table, which determines the DRG-like fee for contracted services. It aggravates the inequalities once it is applied equally to the entire national territory. Brazil is a large country and there are huge social and economic differences between the regions. The SUS Table, as it

is known, has strong deviations itself. One can cite that it pays very well for some treatments, heart surgery for example, especially because of the power of the heart surgeons lobby. The payment of services is also based on political forces rather than cost information.

The Ministry of Health has implemented the first government exercise of healthcare cost information in Brazil. After an international bid in 2000, the Ministry of Health contracted through the Reforço à Reorganização do Sistema Único de Saúde (REFORSUS)[50] a group of professionals to start an exercise in hospital costing in 2001 with some elected DRG-like. It seeks to determine more accurately costs and, consequently, a new SUS Table based on better developed technical criteria.

The third factor, market competition, benefits the hospitals with an appropriate infra-structure to attract privately insured patients. These hospitals, usually located in privileged areas, leave few places available, if any, to the SUS patients. In these hospitals costs are largely estimated and increased. Not rarely, private hospitals select inpatients according to the SUS Table, consequently, according to the expected reimbursement. This situation causes the acceptance of inpatients for some well paid DRG-like, such as radiotherapy, and rejection of others not well paid, such as intoxication (Goncalves et al., 1996).

Private insurance companies, as purchasers, have invested in the progress of cost information techniques and precision more emphatically than the providers. It became a game of power and bargaining between hospitals, health plans and health insurance private companies. This does not represent any serious effort to properly generate cost information within hospitals. As said before in this thesis, hospital managers contract people, mainly administrators, to develop costing systems, based on their acceptance of the doctors domain and not necessarily because of their technical abilities.

Fourthly, the public hospital budgeting used to be a very difficult task. Budgeting in public hospitals was usually generated after the event. An example is the usual absence of an approved budget and much less funds in the first months of the year, wide covered by the press, because of political negotiations, which implies regular delays in budgeting. This occurs at all three governmental levels. Therefore, this causes extra effort for managers, who are obliged to adapt and manipulate the accounts, which means sometimes the practice of a

[50] http://portalweb02.saude.gov.br/saude/

budgeting pro-forma (Costa et al, 2000). Also, funds can come according to political and not administrative criteria.

Taking into account discussed factors and comparing with British hospitals, cost information within Brazilian public hospitals has started to gain certain importance and complexity, see Figure 3.6. The history of costing and budgeting practiced in a non-inflationary period can be reduced to five years for public hospitals. This emphasises how extremely opportune the comparative study of cost information management in Brazil is with Great Britain, which has done it for a longer period.

The Country has emerged from an inflationary crisis that covered inefficient hospital administration. A monthly inflation of two digits freed managers from doing any planning and control. Nowadays, cost information is receiving the necessary attention and it is recognised as essential in the whole hospital network. In the last five years the attention to the application of cost information in hospital management has also increased, mainly in terms of public hospitals. Managers of these hospitals understand that this is an excellent opportunity to mitigate harmful effects of the systematic resource scarcity (Goncalves et al., 1998).

Chapter summary

In Britain and Brazil governments have sought to attain control of one of the major areas of spending in the welfare state. In Great Britain this culminated with the internal market reforms in the beginning of the 90's, which shifted the balance of power away from provider groups including hospital doctors. In Brazil, the most important change was the implementation and regulation of the SUS in the beginning of the 1990's. Table 3.11 summarises the main points of the Chapter. It is important to note that the dominant style is evolving to a corporate style with the predominance of the clan culture that was found in the first period of the NHS.

Great Britain has proved to be able to interfere and conduct national health policy and, also provide funding. The Brazilian Government has taken initiatives that point to nationwide policy making, but it does not interfere in the local execution. It is not known whether such an action is explained by a reasonable strategy or whether it is simply incapacity or indifference.

The SUS is somewhere between the British and the American health systems. The National Constitution of 1988 defined the SUS as being a public system, which should provide a

service free at the point of delivery based only in the citizenship. This is reminiscent of the British NHS system. However, the SUS practices a re-imbursement of services provided in a DRG-like fee basis. Access to the health services is a privilege of those who can afford it. Providers are competing for private and well-insured people. The less favoured people have restricted access in Brazil. Thus, neither the model of a public national health system nor the system guided by free market principles matches adequately the Brazilian SUS.

Table 3.11 – The development of Brazilian healthcare

Years	Type	Some characteristics	Dominant style	Transference	Financing
Pre 1930	CAPs	Company employees Mutual societies Brotherhoods	Diffuse Market	No public funding	Compulsory contribution
From 1931 To 1967	IAPs	Civil servants and their dependents were entitled Rural population Involved other groups	Diffuse Market	Public funding for just the bureaucratic work	Compulsory contribution and/or free association
From 1967 To 1987	INPS INAMPS	All IAPs were grouped Based in the work status Wide net was created	Centralisation Hierarchy	Budgets	Compulsory contribution and/or free association General taxation
1988 onwards	SUDS SUS	Universalism of access Insurance status	Decentralization	Reimbursement DRG-like fee for service	Compulsory contribution and/or free association General taxation

The health system in Brazil presents market characteristics. Doctors dominate it. As seen in previous section, doctors are situated in the point of convergence of all SUS funds and policies. Now they are grouping into co-operatives seeking to eliminate intermediary transactions and, also to assume public hospitals management (Costa et al., 2000). Hospitals are not different. The corporate culture dominates the managerial structure, this suffocates any possibility of change and the hierarchy has been submissive.

Also, the concept of universalism of access is associated to the form of payment to providers in terms of DRG-like fee for service. It is known that Brazil is a huge country with different regions and infrastructures, however, the government practice the same DRG-like fee nationwide and with large discrepancies between spent-reimbursement in certain types of treatment. This leads to distortions for which hospitals try to compensate, for example attending just the cases known as profitable. The other ones are encouraged to look for other hospital units.

In 1997, for each US$ 1.00 that Brazil spent in health, Great Britain spent US$ 2.70 (OMS – Informe sobre la salud em el mundo, 2000). Any comparison in terms of per-capita

expenditure involving the Brazilian system would be artificial to some extent. Firstly because the different distribution of resources around the country reaching the population unevenly. Secondly, the different access to the available technology, i.e. better equipped hospitals are situated in the Southeast and South regions. Thirdly, it is well known that since 1999 there has been a huge devaluation of the Brazilian Real, this affects even more the hospital access to new technology.

Cost information within public hospitals in Brazil is at a first stage because it is still a very young practice. The corporate culture regards it with a mix of suspicion and disdain. However, it has shown signs of progress and the hierarchy is seeing it as an opportunity to gain some control.

Chapter 4 - The organisational setting

Preceding chapters 2 and 3 presented the national health systems structures and policies in Great Britain and Brazil. They also discussed the evolution of hospitals management and, cost information. The environment and the reflex mirrored by hospitals management and structure were shown. As seen, it is a complex and changing environment in both countries, which represents, to some extent, no reasonable degree of certainty, stability and predictability.

Giving this context, healthcare systems should be decentralised (Collins et al., 2000). Thus, due to be large and diversified organisations, hospitals management should be decentralised as well. Also, the circumstances have favoured the increase of non-programmed decision-making and problem solving in planning and control. It is well known that a multidivisional structure with increasing non-programmed decision-making and problem solving demands more investment and skills of lower managers in planning and control and consequently they are more vulnerable to opportunistic behaviour and bounded rationality.

In this case, a collection of strategies and lines of thought about planning and control within organisations come up. They have a common starting point, irrespectively of the countries involved, i.e. scientific rationalism. Hence, a scope of possibilities, which range from the partial acceptance to total rejection of scientific rationalism, is opened. The term scientific rationalism is used as posed by Haynes (1999, p. 2)

> "the best known historical proponent of scientific rationalism as a methodology for organisation planning was Herbert Simon (1957). He proposed an ideal model of decision-making that focused on logically considering all possible alternatives, strategies and outcomes."

This author admits that "Simon was aware of the prescriptive and idealised limitations of his hypothesis and his perspective later adjusted to be more pragmatic" (ibid).

The British Central Government has involved hospital managers with managerialism since the Griffiths' Report. Their counterparts in Brazil are still living under a political umbrella clearly reflecting another environment, i.e. the empire of pressure groups and the exercise of power, which can be more correlated to complex rationalism. The task of explaining the occurrence of non-programmed decisions in large and complex organisations is hampered by the absence of a universally accepted theory that describes why managerial functions and activities are organised and exercised in a particular way. There are differences between policies, hospitals,

planning, control, treatments, procedures, activities and costing systems among others. From the theories, two are recognised as able to shed some light and explain some differences and similarities on these organisational activities, i.e. contingency theory and modes of governance. This research is going to follow these approaches to examine the way planning and control functions are organised within hospitals at the intermediate level management. This does not invalidate the use of insights from other theoretical frameworks to reach the objective.

Therefore, considering the questions stated in Chapter 1, this chapter discusses the main theories that support the environmental complexity reflected within hospital managerial functions and structure, which gives basis to the scientific rationalism and other strategies of planning, control and decision-making and problem solving. This is going to be developed in the next chapter of this thesis. This chapter presents the organisational setting, which involves contingency theory and modes of governance. Chapter 5 completes the literature review. It presents relevant models and approaches providing an overview of theoretical frameworks applied to planning and control processes.

Contingency theory justifies the use of an appropriate accounting system, which involves cost information, supporting and matching the structure, technology and environment of the organisation (Kim, 1988; Covaleski et al., 1993). Its focus is an overall view of the organisation. Transaction costs is concerned with economic transactions being conducted accordingly to markets and hierarchies (see Getz, 2002). It focuses transactions between actors, exploring issues related to bounded rationality and opportunism. From this framework emerges the clan or corporation. It will be approached as a third mode of governance, given its importance in terms of the public sector and, particularly, hospitals as discussed in preceding chapters of this thesis (Lapsley, 1993, 1997; Osborne, 1997).

The literature was chosen based on certain characteristics. Firstly, a comparative study between two countries excludes approaches that could be applicable only to a specific country. Thus, the literature is presented at one level that embraces the core elements of the theory pertaining to environment, organisations and managers irrespective of country. Secondly, posterior data analysis compares occurrences in both countries considering that the social phenomenon is taking place under a common theoretical umbrella and not a specific one. Therefore, conclusions can be drawn considering a common literature background.

Thus, initially, contingency theory is reviewed and examined in this chapter. Following this, it is unfolded and discussed in two parts: the first part exhibits the technical-rational and the collectivist approaches and the second one explains the functionalist to the interpretative approach. Both parts are considered suitable to the objectives of this work.

4.1. Contingency Theory

It is acknowledged that the contingency theory has its roots in the work started in the early 1960s within the Industrial Administration Research Unit at Aston. The Aston Group conducted an empirical research involving 46 organisations both in the private and in the public sectors. The Group sought to study the relationships between: a) organisational structure and functioning; b) group composition and interaction, and, c) individual personality and behaviour (see Pugh et al., 1986, p. 38).

Summarising what emerged from this 'comparative study of organisations' it poses that "since all organisations have to develop means for channelling their activities towards the achievement of pre-specified aims, a pattern of regularities emerge over time' (Chia, 1997, p. 686). This pattern of regularities is called organisational structure. Despite the fact that "all organisations may be different and it may be impossible to equate them to one another" (ibid), it is possible to "state these differences and to classify them so that something useful can be said about various kinds of organisations and the ways in which they function" (Pugh and Hickson, 1968, p. 374).

It is important to say that these authors perceive the activity of organisational analysis as being the continuous study and identification of similarities and differences among and into organisations, mainly the ones involving the structure and the variables that influence organisations, such as environment, technology, size, ownership, strategy, culture, location and others (see Emmanuel et al., 1993; Chia, 1997). Organisations can typically face multiple and possible conflicting contingencies (Child, 1977).

The Aston Studies, with contributions from other authors such as Chandler (1962), Woodward (1965), Lawrence and Lorsch (1967), and Williamson (1970) can be considered of

impact on the direction of organisation theory. Certainly, the most significant contribution of these earlier initiatives in organisational analysis was the development of a 'contingency' approach to the organisational design. Other authors such as Pfeffer (1981) and Flamholtz (1983) made a more conceptual contribution in terms of power and culture and this contingency approach remains as an important perspective over the organisational analysis.

In terms of contingency theory of management accounting, Emmanuel et al. (1993) set out "the contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system applicable to all organisations in all circumstances." (p. 57). The use of cost information is contingent on the circumstances faced by organisations (Drury, 2001). This research uses the contingency theory to approach the use of cost information within public hospitals. As already posed, this research explores the use of cost information for planning and control, therefore it seeks to investigate and understand to which extent the available cost information matches the planning and control processes that occur within public hospitals. This study performs this through the 'use of cost information', i.e. the 'use of cost information' from the middle management perspective. This is done through the comparison of two countries. There are no restrictions defining the contingent circumstances that influence the accounting systems and, consequently, the cost information (Drury, 2001).

Studies using contingency theory - that attempts to identify "specific aspects of an accounting system that are associated with certain defined circumstances and to demonstrate an appropriate matching" (ibid) - have been largely developed for profit organisations and few, if any, were applied in Brazilian ones.

A general and wide accepted categorisation of the studies involving contingency theory is a rather difficult matter. Emmanuel et al. (1993) relate several studies involving contingent variables, organisational design and type of accounting information system. Rayburn and Rayburn (1991) presents environmental uncertainty and information processing, environmental uncertainty and performance evaluation. The majority of them are still related to private companies.

Contingency theory developed several aspects of uncertainty, including unpredictability of input-output relationship and others (Rayburn and Rayburn, 1991). "Uncertainty is a lack of

information about future events so that alternatives and their outcomes are unpredictable" (Rayburn and Rayburn, 1991, p. 58). In the case in point, middle managers of multidivisional organisations, such as hospitals, located in dynamic and complex environments should experience a large number of different factors and influences in the planning and control processes. The exploration of this scenario is considered important.

Miles et al. (1974) found opposing perceptions about uncertainty involving the management team in different organisations. Otley (1980) reviewed the emergence of contingency approaches in management accounting research. The above mentioned author proposed a more comprehensive model of the contingency framework to replace a simple linear model that had been used for most of the previous studies.

Rayburn and Rayburn (1991) hypothesised about the introduction of the DRG classification system and the effect of uncertainty over the: 1) accountant's importance and involvement; 2) use of financial data for control; 3) accountant's job performance satisfaction, and 4) accountant's job-related satisfaction. They tested these hypotheses for American hospitals.

Gordon and Narayanan (1984) also studied the relationship between the organisation's environment, structure and information system. The relationship of the structure and information system with the environment was supported by their research. Brignall (1997, p. 326) suggested normative proposals to cost system design considering a wider management information system in services. He noted that "service organisations today compete on a range of dimensions and not just cost and price, so a good planning and control system cannot focus on the financial dimension alone. In consequence, service costing systems must be seen in their wider context, as part of a management information system which would also embrace non-financial information." This author advocates the design of management information system considering a series of relevant contingent variables such as environmental hostility, organisation's mission and strategy and its service type (see also Fitzgerald et al., 1991; Gordon and Miller, 1976).

Gordon and Miller (1976) provide ideas for hypotheses to be tested. These authors provided material enumerating variables (environmental, organisational and decision-making), which "have been shown to be critical to the organisational performance" (p. 59). They related those variables with desirable characteristics of accounting information system. Even though it is

being essentially applied to private companies it is valuable to state that "an accounting information system should be designed in light of contextual variables surrounding the specific organisation" (p. 65). These authors reinforced the fact that "a contingency approach must be taken in designing organisation's Accounting Information System" (op cit., p. 65).

Schweikart (1986) studied the effects of environment on accounting information systems in different countries. Horovitz (1980) outlined management styles, organisational structures and management control systems of three different countries and related them with their respective environment. The contingency approach emphasises that management styles and organisational structures are contingent to the organisation and that a unique universal set of management characteristics does not exist.

Mak (1989) explored contingency fit, internal consistency and financial performance. He hypothesised using managerial perceived environmental uncertainty, sophistication of control systems and financial performance. His analysis provided limited support for the contingency theory but it did furnish strong support to internal consistency related to the financial performance. In hospitals, the contingency fit between organisational context and the design of management accounting system has been measured by user information satisfaction (Kim, 1988). Drazin and Van de Ven (1985) when studying preceding approaches to fit, classified them into three categories: 1) selection, 2) interaction and 3) systems. The tests used were, respectively: 1) Pearson's correlation, 2) Analysis of variance and regression, and 3) Euclidean distance measure.

Although little work has been done in Brazil, and only a very limited amount in public hospitals, these studies provide a useful base for this research.

4.1.1 The technical-rational and the collectivist approaches

The fact that environment, size, technology and structure are determinant of accounting, planning and control systems is a cornerstone for essentially two approaches: the technical-rational and collectivist (Ansari and Bell, 1991). Firstly, the outside-in process or, environment to the organisation way of influence can be called 'technical-rational' approach. It has its origin in the economics of industrial organisation. Such an approach is based on

Chandler's work of industrial development at the end of the 19th century. Three key perspectives support the technical-rational approach:

1. An environmental determinism – the organisation's systems and structures are developed to answer environment's impositions;
2. Economic efficiency, meaning that the organisation is structured to answer questions imposed by transactions cost; and,
3. Economic rationality – the behaviour of organisation members is purposeful and can be treated as being a conjugation between 'means' and 'ends' (Simon, 1976; Ouchi, 1977; Ansari and Bell, 1991).

One can encounter representatives of the technical-rational approach in organisational studies in Anthony (1965), Banfield (1973), Pfeffer and Salancik (1974), Williamson (1975), Mirrlees (1976). All of them use a prescriptive approach in their discussions. Kim (1988) presented empirical evidences about the relationship between environmental and hospital internal variables. One can cite Montacute (1962), which investigated the use of cost information within hospitals, Lapsley (1993, 1997) and Jones (1997) as authors whom presented studies involving healthcare system. It is understandable that, in such line of thought, all internal organisational systems are driven in accordance with it, therefore, accounting, planning and control systems should be designed to answer rationality and efficiency.

Secondly, another way is recognised as being the opposite of the preceding view or inside out, i.e. the organisation influencing its environment as well. This is understood as the 'collectivist' approach (Ansari and Bell, 1991). The collectivist approach is essentially a form of sociological structural functionalism. The organisation members are seen in a form of cooperative system. They are deployed this way to attain a satisfactory overall result or the survival of the organisation at least. Tangible literature that considers this point of view is well represented mainly in organisational terms. Hofstede (1981) for example presented alternatives to rational forms of control based in a collectivist point of view. Gray et al. (1997) defend the recuperation of social accounting, the author said this kind of research was abandoned in the 1970s. Ellwood (2000) presented results of a study were other reasons than the technical-rational ones conduct the purchasing-provider relationship in the NHS. Other authors also offer alternative approaches (e.g. Hopwood, 1987; Ansari and Euske, 1987; Ansari and Bell, 1991; Humphrey and Scapens, 1996).

Following such a line of thought, organisational adaptation or adjustment is possible and coherent. As posed by Ansari and Bell (1991, p. 7) "no longer are organisation seen as being driven by dual engines of individual economic rationality and productive efficiency. These are replaced with the dynamics of social interaction." Perhaps the term 'replaced' is stronger than necessary, it should be 'associated' due to the fact that some rationality and efficiency or best value for money, as an acceptable surrogate, must persist (Hood, 1991). Organisational systems or functions such as planning, control and accounting should no longer be studied in a way that do not consider the social context and ignore the influence of wider social and political collectivity (Humphrey and Scapens, 1996; Gray et al., 1997).

Under the collectivist approach, organisational systems can be seen as being channels for social hegemony and values, which gives room to the development of groups and, consequently, corporations. It is understood that concepts of rationality and efficiency are used to legitimate the circumstances of the exercise of power, influence and politics. Burchell et al. (1980) set out that "detailed descriptions of the ways in which organisational resource allocation are the product of intertwining of budgeting and planning systems and political processes have been provided" (p. 12). The individual and social actions and interactions, in a collectivist point of view, provide a fertile soil to explain the shape of planning and control systems within hospitals.

Emmanuel et al. (1993) set out that "a major development was the recognition that the work situation involves both social and technological factors with overall task performance being influenced by both these factors and by interaction" (p.46). A study of a planning or control system should not involve only one perspective. Such a proposed broadening of the view received other significant contributions when authors tended to decide for a non-universally applied approach but "particular forms of organisations were best suited to particular environmental conditions" (op. Cit., p. 47) and this way opened the door for contingency theory.

The contingency key factors are the object of a large amount of studies. One has to recognise that systems theorists firstly brought forward the influence of environment and technology as being key factors on the determination of internal organisational systems and structures. Contingency theorists brought other key factors such as size, origin and history, ownership

and control, charter, technology, location, resources and interdependence with other organisations (Pugh and Hickson, 1976). The Aston Group is cited as being, probably, the responsible for the most expressive study with such a concern (Emmanuel et al., 1993).

It is well known that external policies and healthcare systems configuration have influenced or determined the hospitals middle management mediation role and structures in both countries. However, some authors define such an interrelation as being controversial. One can use outcomes of Aston Group's work as being an example of failure or at least disappointment for this relationship (Emmanuel et al., 1993).

It is no different for the contingency theory applied in management accounting and consequently, cost information systems, i.e. it is subject of criticism (Otley, 1980; Cooper, 1981; Rayburn and Rayburn, 1991). They posed that the issue relating to the design of management accounting systems in the face of contingent variables, when giving conflicting recommendations has not been fully addressed. Secondly, links between environmental variables and effectiveness need to be considered (Kim, 1988). Thirdly, the problem of operational aspects involving contingent variables is not solved. Finally, the nature of the appropriate contingent variable is not clear.

Schoonven (1991) posed further weaknesses. Among them, one can highlight the lack of clarity in theoretical statements in differentiating environmental variables and the tendency to accept the general linear model and correlation procedures as acceptable to explain the relationship.

Relatively to this research contingency theory suggests that the internal planning and control systems, whilst involving cost information, are contingent on differing constraints and entities. Contingency theory is an 'open-ended' theory because there is no universally appropriate system for all organisations. The adequate or optimal planning and control system of each organisation depends on the specific and directed related elements of its environment. And seeing this way, one can assert that effective planning and control systems should be particular and tailored to the management of each organisation (Rayburn and Rayburn, 1991). Goals, use of predictive models, and uncertainty are some variables that relate environment with planning and control in this research.

There is no doubt that an important factor in considering environment influencing, and being influenced by, organisations is the presence of uncertainty. To some extent, the amount of uncertainty in the environment has increased the degree of complexity of models used on planning (see Evans et al., 1986). The opposite should be also true. Emmanuel et al. (1993) seem to approve such increasing complexity but with the perspective of a limit. This increase of uncertainty would seek the construction of an all-inclusive model for planning and control. They claim that the greater complexity of the model is prohibitive due to the amount of uncertainty it should cover and consequently the span of answers must be enormous even in terms of hospitals.

Despite some studies have failed in proving the appropriateness of contingency theory in relation to environmental variables and organisational systems and structures, there are authors who have recognised the presence of contingency variables influencing hospitals accounting systems and, consequently, planning and control (e.g. Kim, 1988; Geiger, 1999). Rayburn and Rayburn (1991, p. 60) posed that "even though it is generally acknowledged that contingency theories suffer from a number of conceptual and methodological problems, it seemed appropriate to examine the impact of the new accounting technology introduced by external factors". New accounting technologies or approaches such as ABC and DRGs have caused differences in the exercise of management functions within hospitals. The position defended by them is acceptable, but not clear from some criticism as well. The same situation can be applied to the study of cultural variables in defining the use of accounting information within an organisation, when the authors use an international trade company as an object of study (e.g. Ansari and Bell, 1991).

Under another perspective, academic and professional accountants have treated accounting as being a functionally autonomous and organisationally independent sphere of practice. In terms of hospitals, it is still reflected in the concentration of studies in the techniques involved in the generation of cost information rather than its use within the organisation. Its independence has resulted in a neglected relationship between accounting and the environment and other organisational functions (Roberts and Scapens, 1985; Dewing and Jones, 1996). They posed that when one studies the interrelationship between accounting and other organisational areas, only one part of inherent complexities of the organisational context is being considered. Burchell et al. (1980) said that accounting research commonly involves studies 'in accounting' rather than studies 'of accounting'. It is not a mere game of words, in

the latter case, accounting should be de-centred and the study of the context, in which the accounting system and consequently cost information should fit, is preponderant, this is the case in this work.

Starting from such an approach, contingency theory is seized to offer the desired integrative framework between environment and organisations (Hayes, 1977; Roberts and Scapens, 1985; Otley, 1980; Emmanuel et al., 1993) meaning that the environment, e.g. policies and technologies, influence hospitals, which influence the environment. It is important to note that Roberts and Scapens (1985) admitted, "however, as the recent interest showed by accountants and others ... organisational theory has been found to be anything but coherent and unified" (p. 444). There is a multiplicity of approaches to the study of organisations and they scarcely reflect the amount of faces within social theory. In the case of this research, it sounds appropriate due to the fact that planning and control are studied free of a single theoretical perspective.

4.1.2 From the functionalist to the interpretative approach

According to the ongoing discussion, several aspects of an organisation's formal structure, management styles, policies and procedures serve to demonstrate a conformity with institutionalised rules and expectations expressed by external constituents and influences. Orthodox theorists of accounting have emphasised that the purpose of accounting systems is to provide elements to facilitate rational decision-making "by faithfully representing the task technology or economic reality of the organisation" (Covaleski et al., 1993, p. 65). Therefore, consistent with this point, within the healthcare sector, accounting systems, ostensibly help hospitals control, costs for example, and encourage planning. The hospital, as an organisation, should absorb this and manifest it according to its own social life and practices, which goes from the functionalism to the interpretativism.

Functionalism together with system theory has been the dominant paradigm for accounting research, which has influenced the use of cost information by hospitals (Roberts and Scapens, 1985; Brignall, 1997). The emerged systems in practice were considered able to determine the behavioural pattern of hospital members, not considering the social interaction as being an instrument that shapes the system. Roberts and Scapens (1985) posed that

> "the purposes of accounting systems are often conceived in terms of an unambiguous and uncontested set of organisational objectives or imperatives, and it is assumed that once designed, the accounting systems will determine what people do. (p. 445) ... the analysis of systems has typically been abstracted from the analysis of concrete practices since it is assumed that once systems are designed they will, via role prescriptions, determine what people actually do" (p. 447).

This situation has, to a large extent, been present in the cost information literature. That is to say, starting from the point that a clear set of organisational objectives is posed; the cost information should be used to reach them via role prescriptions or conditions 'if-then'. Authors have studied the cost information within hospitals, as if it was possible that the system determines what managers should do. This means that the system can be treated as being immune from concrete social practices and interactions. This seems to be not true because systems are not completely immune to social practices and interactions (see, for example, Burchell et al., 1980). These authors recognise the gap between theory and practice. Within the hospitals, this is reflected in terms of practices irrespective of the country.

Another point to be depicted is that systems are deterministic – applying the 'if-then' procedure to organisation members exercising the knowledge based on planning rather the pragmatic one (Tsoukas, 1995). Putting it this way, it is supposed that people can behave like programmable robots. This is not expected from hospital managers' behaviour.

Contingency theory can be considered a "holistic apotheosis of the functional approach" (Hopper and Powell, 1985, p. 441). Despite the exaggerated assertion, if one considers that certain sociological paradigms range from subjectivism to objectivism (Hopper and Powell, 1985), the functionalism tends to the objectivism and, consequently, to the contingency theory as well. Giddens (1976, 1979, 1981) can be used, to some extent, to justify a possible composition of the functionalism and interpretative approaches or, at least, to soothe the edges or to justify their overlapping. This author made a considerable effort to, for example, incorporate both strands within a single philosophical framework (see Hopper and Powell, 1985, p. 451). Also, his idea can be considered as being a competitive and more acceptable synthesis of different schools, which compose the contemporary social theory. Therefore, it can be understood that there is an individual meaning and people's perceptions of 'reality' and also it can be understood that the idea of an independent 'reality' is acceptable. This is supportive to the use of quantitative and qualitative approaches to understand a social phenomenon.

Giddens based his discussion, initially, on the 'duality of structure'. It is an apparent paradox that individuals influence the social phenomena and simultaneously are influenced by it. Roberts and Scapens (1985) put that "contemporary social theory ... rather than seeking to elucidate this paradox, merely takes up one side to neglect the other" (p. 445). Thus, putting it this way, one can associate Functionalism with the fact that the individual is a product of the society or the organisation. The Interpretative approach inverts the situation and the individual is seen as the producer of social reality. Giddens called 'dualism' the relationship between subject and object or individual and society. He refused to admit the term system independent from the social influence and used the system-ness concept to avoid criticism. He refers to the fact that systems should be analysed as institutionalised forms of interdependent social practices (Roberts and Scapens, 1985). Such an approach leads to the insertion of the groups' interests in the system, e.g., clans. The posed integration between these systems should also be considered.

Accounting systems, and consequently cost information systems, are able to represent and mediate social interaction and, consequently, individual or organisational goals (Covaleski et al., 1993). The evidence of these goals or objectives is fundamental to understand planning, control within hospitals.

Organisations are not entities with a particular life, and therefore, independent from individual's thinking and acting – as the functionalism and rationalists could represent it. In another way, organisation cannot be understood as being just a context for social action and interaction, without general objectives and goals, as the interpretative approach could presume. In this case the integration of both approaches is evident and emphasises the modes of governance as being adequate to comprehend the hospitals planning and control processes, internal structures and management, and accounting system, as an acceptable carrier of the elements for this integration.

4.2. Modes of Governance

The organisational failures framework emerges from the work of Coase and is explored by Williamson (see Emmanuel et al., 1993). In turn, the transaction cost theory is concerned with identifying the organisational arrangement that most efficiently economises on

transaction costs (see Getz, 2002). Getz (2002) accepted that firms opt for a transactional approach to political involvement. Therefore, the main focus is now the transaction between actors explaining the absorbance of environmental influence by the hospital. Consequently, the focus is on the forms of organisation within hospitals, rather than on the overall hospital and the external environment. Despite some differences in terms of names, the theory discussed in this section is relevant and it seeks to cover hospital management styles and structures within a complex environment, using markets, hierarchies and clans - which are common to both countries - as modes of governance (see, for example, Ouchi, 1980; Bourn and Ezzamel, 1986; Lapsley, 1993; Osborne, 1997).

The integration of theories relating to modes of governance and contingency theory aids understanding in this thesis as the integration enables hierarchical or structural authority to address individual opportunism. Both theories recognize that decision makers should be influenced by self-interest and yet, to some extent or by variable degree, both frameworks accept that organisational structure and design and the design of accounting system are influenced by, and influence, the external environment.

4.2.1 Markets, hierarchies and clans

Markets, hierarchies and clans are considered forms of organisations, i.e. "an organisation may be thought as any stable pattern of transactions between individuals or aggregations of individuals. Therefore, this framework can be applied to the analysis of relationships between individuals or between subunits within a corporation, or to transactions between firms in an economy" (see Ouchi, 1980, 140). Therefore, in this definition, "a market is as much an organisation as it is a bureaucracy or clan" (op cit., p. 132). Despite the fact that these forms of organisations can be identified in the healthcare systems in a broader meaning in both countries, this thesis emphasises their application in the traditional organisation setting, i.e. public hospitals (see Bourn and Ezzamel, 1986).

As it is known, an organisation is a typical solution when the production is too complex for an individual alone. One can explain it using the Barnard's (1968) technological imperative or the March and Simon's (1958) idea that "an organisation will exist so long as it can offer its members inducements which exceed the contribution it asks of them" (Ouchi, 1980, p. 246).

Blau and Scott's (1962) can also be used though it seems naïve, i.e., "... a purposive aggregation of individuals who exert concentrated effort toward a common and explicit recognised goal" (p.246).

The emerging organisation was introduced by the classic work of Coase (1937), and later explored in depth by Williamson (1975, 1978, 1991). They argued that an organisation exists because it can mediate economic transactions between its individuals at lower costs than a market mechanism can or, organisation supplants markets for many products and the majority of services to minimise transaction costs. Powell (1990, p.310) set out that "organisation or hierarchy arises when the boundaries of a firm expand to internalise transactions and resource flow that were previously conducted in the market place". Or in other words "it is more efficient to function as one large organisation than as numerous smaller organisations" (Lapsley, 1993, p.384). This can be considered a typical reason for the actual hospitals structure. They have to be necessarily large and naturally complex due to the environment and the nature of services provided.

The internal market in Great Britain came up as an attempt to reduce transaction costs and sought efficiency through competition between hospitals. Markets should be more efficient because, to operate, they can mediate transactions without paying the costs of searching, contracting, managing, etc. It can be expected that in a perfect market "transactions are carried out without costs" (Johanson and Mattsson, 1987, p. 37) and "the transaction cost approach explicitly regards efficiency as the fundamental element in determining the nature of organisations." (Ouchi, 1980, p. 247). The actors contracting are free and totally informed about opportunities, decision-making is rational and there are always alternative and reliable suppliers and buyers.

When such conditions do not prevail, transaction costs will emerge due to the exigency of effort, and resource consuming, organising, carrying out and controlling transactions among different actors. The transaction cost approach is largely responsible for the institutional form, i.e., the governance structure of the transaction (Johanson and Mattsson, 1987; Ouchi, 1980; Williamson, 1975, 1978, 1991; Thompson et al., 1991). In this research its particularly important because it justifies the presence of different structures within hospitals.

The arrangement that defines the mode of governance was built upon the conjugation of a certain group of characteristics described by Williamson (1975, 1978, 1991). He argues that there are two postulated behavioural characteristics that can interfere with contracting and upon which the management style or structure might change: 1 – decisions and actions are defined by bounded rationality; and 2 – opportunism.

Opportunism will occur and increase in cases of high uncertainty of cause/effect relationship and high uncertainty about objectives (see Thompson and Tuden, 1959; Burchell et al., 1980). This will also take place in case of incompleteness of task instrumentality, i.e. beliefs about cause/effect knowledge and high degree of ambiguity in terms of objectives/goals (see Macintosh, 1994; Drury, 2001). Ouchi (1979, 1980) establishes the clan control as the form of control in case of imperfection in the knowledge of the 'transformation' process and low ability to measure output. This is the case of hospitals and it is also an answer to the increased opportunism. Bourn and Ezzamel (1986) posed that in case of high degree of goal incongruence and low degree of ambiguity in performance measurement, the market form emerges and is tolerated. In the opposite situation, i.e. low degree of goal incongruence and high degree of ambiguity in performance measurement, the clan emerges and is tolerated. The above mentioned authors said that the hierarchical form takes place and is tolerated in the case of medium or intermediate level of goal incongruence and ambiguity in performance measurement. It is important to notice that Bourn and Ezzamel stated that in the case of high degree of goal incongruence and high degree of ambiguity in performance measurement, a form of organisation and managerial functions does not emerge. In those cases the controls, for example, are more ritualistic/symbolic. Figure 4.1 summarises this.

Figure 4.1 – Forms of organisation

		Degree of goal incongruence		
		Low	Medium	High
Degree of ambiguity in performance measurement	Low			Market
	Medium		Hierarchy	
	High	Clan		Ritual/Symbolic

Source: adapted from Bourn and Ezzamel, 1986.

It is possible under conditions of certainty, to meet the necessary information needs and thus, build a contract between parties that embrace all possible involved contingencies. In the same way is possible to control, post facto, the fulfilment of all conditions imposed by the contract.

However, under uncertainty conditions, the complexity of contracting will rise and consequently its cost. The implications of the above-described assumptions on contracting between actors rise considerably when there are significant number of transactions, high level of uncertainty, and; high 'asset specificity', what is the case of hospitals.

Under the presence of high level of 'asset specificity', the situation tends to deteriorate even further (mainly in cost terms) as there will be few possibilities for a buyer or for a seller to replace each other (Lapsley, 1993; Johanson and Mattsson, 1987). Such a situation has precipitated the development of organisations where rules-based behaviour inhibits the occurrence of the imperfections of the contract setting process in the market (Lapsley, 1993).

Contractual relationships define market transactions, or exchanges. However, certain degrees of uncertainty, bounded rationality, and opportunism can make contracting fail. It is considered that in case of market failure, the hierarchy should emerge (Ouchi, 1980; Lapsley, 1993; Osborne, 1997). Therefore, every bureaucratic organisation can be considered an example of market failure.

It is important to note that within a market "individuals are motivated by self interest in the rational pursuit of maximising their well-being" (Osborne, 1997, p. 319). Given the market tradition in Brazilian healthcare, it is expected that clinicians within hospitals would maintain this level of expectancy. This would be comparatively more apparent in that country than in British hospitals, which did not experience this tradition.

The bureaucratic or hierarchical organisation (see Bourn and Ezzamel, 1986; Osborne, 1997), presents two advantages over the market relationship:

1. Employment relation, i.e. an incomplete contract that permit the organisation to appoint superior officers that:
    - can direct the daily work activities of the employee, and;
    - monitor his performance.
2. Can generate an environment of trust between employees in a more concrete way, than a market can, between parts of an exchange. They assume a certain common purpose because they expect that long-term relationships reward good performances and punish poor performances, they develop some goal congruence (see Ouchi, 1980).

Therefore, as summarised by Ouchi (1980)

> "the market failures framework argues that markets fail when the cost of completing transactions become unbearable. At that point, the inefficiencies of bureaucratic (hierarchical) organisation will be preferred to the relatively greater costs of market organisation, and exchange relationships move from one domain to another" (p. 134).

The key mechanism of coordination in hierarchies is by means of vertical management structures (see Osborne, 1997). It is important to know that one mechanism does not exclude the other. It is known that large firms move from U-form (functional) to M-form (divisional) motivated by a desire to simulate capital market within a bureaucratic framework, seeking to reach its superior efficiency (see Ouchi, 1980; Thompson et al., 1993). Therefore, the same firm can develop or contain different forms of organisation. According to Emmanuel et al. (1993, p. 201) "this classification can be considered a simplification, and any given organisation will not necessarily fit neatly into a category". Therefore, these organisational structures, or forms, compete in terms of how, where and which one of them is more adequate, especially regarding Brazilian hospitals.

A bureaucratic organisation involves a system of hierarchical surveillance, evaluation and direction. When the ambiguity of performance evaluation increases, the bureaucracies can fail. Also, "when tasks become highly unique, completely integrated, or ambiguous for other reasons, then even bureaucratic mechanisms fail" (Ouchi, 1980, p. 134f)

In this case, i.e. "a form of mediation succeeds by minimising goal incongruence and tolerating high levels of ambiguity in performance evaluation", which is the clan (Op. cit., 135). It is also called organic solidarity and organic relationships are considered as the key to coordination (Osborne, 1997). In this case, any group, which has organic solidarity, can be considered a clan: a profession, a labour union, or a corporation. In the case of this research, the medical profession is considered a clan culture (see Bourn and Ezammel, 1986). The organic solidarity that exists in the medical profession is well known, particularly in Brazil.

The clan fights the hierarchy because of clinical freedom. The hierarchy wants to control the clan members, however they do not accept it easily. Nonetheless, the clan tries to control the hierarchy. Finally, Bourn and Ezzamel (1986, p. 213) set out "clinical freedom is interpreted here as a form of clan control".

Ouchi (1980, p. 136) set out "the professionalized bureaucracy may be understood as a response to the joint need for efficient transactions within professions (clan) and between professions (bureaucracy). Goal congruity, as a central mechanism of control in organisations" is also important. This is the case of hospitals.

In this case, the clan is composed of the clinicians (professionals) and the hierarchy is the professionalized bureaucracy. The goals of the clan and the hierarchy are not necessarily the same and clearly stated (see Bourn and Ezzamel, 1986), particularly in Brazil. These authors posed that "management and control in the NHS ... exercised through a corporate culture, or clan form. In specific terms, this may be described as the hegemony of the medical profession to undertake patient-care through the exercise of clinical freedom" (p. 210f). These authors comment some quotations from a paper authored by a surgeon and, among them, one can highlight: "Bureaucracy can, like a tumour, turn malignant and can metastasise throughout the whole body of medicine. We need a good bureaucracy and whether it is good or bad often seems to depend upon the sense of responsibility that the clinician shows towards it." Thus, the clan in Great Britain is adhered to their clinical freedom.

As seen, the above mentioned authors have stated that one mechanism does not exclude another and even the three models can appear simultaneously (Ouchi, 1980; Bourn and Ezzamel, 1986; Osborne, 1997). Osborne set out that there should be one dominant type. Hospitals can be considered organisations where more than one type will appear, mainly the hierarchy and clan. There are reasons to believe that the clan formed by the medical profession within hospitals (or sub-culture, see Bourn and Ezzamel, 1986) in Brazil are dominant or try to be dominant. Because traditions are implicit, rather than explicit rules that govern behaviour (see Ouchi, 1980), the clan which permeates the Brazilian hospitals are expected to be, due to the market tradition, motivated by self-interest and they tend to maximise their well-being or clan objectives. This can be conflicting with the hierarchical model. In Great Britain this situation can be different. Osborne (1997) studying public institutions admitted, in organisations within the clan, not vertically integrated and loosely coupled and the existence of explicit organisational missions of its own.

"In practice there is quite a high level of agreement about the operational objectives of the NHS ... On the other hand, there is little doubt that performance evaluation is an ambiguous

art in the NHS." (Bourn and Ezzamel, 1986, p. 209). These authors quoted Devlin (1984): "when medicine is primitive doctors are shrouded in mystery and psychotherapy is the paradigm of clinical care. Clinician freedom is part of the heritage that has lingered on from some golden age of medicine as an art form. This age is over" (p. 212). Maybe it is over in Great Britain but not in Brazil. Brazilian doctors are still seeing themselves as a kind of semi-gods with their own objectives and particular views of healthcare.

Despite the considered importance of transaction costs to understand organisational phenomena, it has been criticised by both sociologists and economists. It has been classified as a vague concept, ill defined, and that there is little, if any, empirical evidence that economising on transaction costs is a good explanation of, or even a dominating motive for, any vertical integration (Perrow, 1986; Johanson and Mattsson, 1987).

The market and hierarchies theory has been attacked because of its alleged preoccupation with economic efficiency, putting aside issues of power and control within organisations (Perrow, 1981). Further criticism is that when markets and hierarchies do not take into account the dimensions of intra-organisational behaviour, e.g. authority and co-ordination, which are important to understand the process within organisations (Lapsley, 1993).

Another constraint is that Williamson has made unrealistic assumptions about the differences between market and hierarchies. "Opportunism also exists within firms; organisations are not necessarily able to economise on bounded rationality; markets can also be characterised by asymmetrical power relations (controlled by the 'fist' – tight control) and so on" (Johanson and Mattsson, 1987, p. 41).

Hierarchies and markets (make-or-buy processes) are at opposite ends of a continuum that is deemed a core assumption of the transaction cost approach and it means that they are mutually exclusive means of allocating resources (Bradach and Eccles, 1989). Nevertheless, there are other forms to transact business.

The response to criticisms attempts to extend and develop the theory. The concept of corporate or 'clan' pretends to be an answer to conceptual frailties (Ouchi, 1977, 1979, 1980; Ouchi and Price, 1978; Williamson and Ouchi, 1981). Where the clan concept does not fit the network or other forms arise (see Table 4.1). In terms of health care systems and hospitals, it

could be seen in preceding sections. Thompson et al. (1991) proposed four approaches to modes of governance based on the unit organisational form (independent or hierarchical) and the approach to relationships (competitive or cooperative). The British health system has just moved between theses 'extremes', i.e. from competition to cooperation or from the internal market to co-operative networks. In general terms, a network structure is proposed as being a more accurate form to characterise special kinds of alliances rather than joint ventures among hierarchical firms (Powell, 1990).

Table 4.1 – Modes of governance

		Approach to Relationships	
		Competitive	Cooperative
Unit Organisational Form	Independent	Classic Market	Network Structure
	Hierarchical	Bureaucracy	Clan

Source: Thompson et al., 1991, p. 244.

"The 'clan' control system relies on social controls rather than the legal or economic sanctions of the bureaucratic organisation" (Lapsley, 1993, p.385) or on reciprocal relationships (Osborne, 1997). The 'clan' or corporate culture has been used to explain governance modes within organisations. It means that the 'clan' mechanism emerges due to the frailties brought about by 'soft contracting' between parties and the opportunism as well. This mode of governance would have answers to illuminate obscure points present in incomplete contracts and an 'elaborate governance apparatus' (Williamson and Ouchi, 1981). In terms of health care and, consequently, hospitals, the presence of this mode of governance is discussed by authors such as Ouchi (1977), Lapsley (1993), Ashmos et al. (1998) and Osborne, (1997).

Stiglitz (1991) and Lapsley (1993) defend the shift from market to hierarchy. This shift is causing strong interest on changing boundaries between organisations and the market and, for instance, theories of behaviour within organisations.

According to Ouchi (1980) the three modes of governance here described have in common norms of 'reciprocity' that underlies all exchange action (see Table 4.2). Gouldner (1961), cited by Ouchi (1980), argued that this is one out of two social agreement universally accepted between societies across time and most cultures. Under market condition, reciprocity is the unique normative requirement and prices are the informational requirement of decision-

making. Ellwood (1996b, p.283) pointed out that "in perfectly competitive markets, the manager has no power over price, being compelled to accept the prevailing one, since price is determined by interaction of all buyers and sellers". Prices are a highly sophisticated form of information for decision-making in this case.

Table 4.2 – Modes of governance and normative requirements

Mode of governance	Normative requirements	Informational requirements
Market	. Reciprocity	Prices
Hierarchy (Bureaucracy)	. Reciprocity . Legitimate authority	Rules
Clan (Corporate culture)	. Reciprocity . Legitimate authority . Common values and beliefs	Traditions

Source: adapted from Ouchi, 1980, p. 138.

The legitimate authority provides the assignment of the subordinates by 'organisational superiors' after specified work has been done (regulated by internal contracts and payments). Legitimate authority also permits the audit of the subordinates' performance more closely than is possible within a market relationship.

The term hierarchy immediately conjures up the idea of bureaucracy. In a bureaucracy, legitimate authority will commonly take the 'rational/legal' form, whereas in a 'clan' it may take the 'traditional' form. Bureaucracy asks for rules to govern. Rules are addressed to specific, quite often routine or programmed, decisions or problems. When a decision or problem occurs and there is no particular rule to solve it, it is usually sent up the hierarchy until a point where someone else (policy-maker) will invent a rule to work it out. In turn, 'clan' demands traditions or implicit rules that govern behaviour. They are not written down but are present and take time to be learnt by recent people within organisations. Ouchi (1980) stated that "the set of traditions in formal organisation may produce a unified, although implicit, philosophy or point of view, functionally equivalent to a theory about that organisation." (p. 141). Hence, reciprocity is universal, legitimate authority is present within organisations in general, nevertheless common values and beliefs are not a constant in organisations. However, it can be observed that certain degrees of socialisation, regulated by market or bureaucratic mechanisms are present within hospitals.

It is important to understand and highlight how to apply and identify such modes of coordination. Osborne (1997) summarised and presented a group of valid characteristics

under which it is possible to identify the main mode that governs entities within the health system (see Table 4.3). He defends the presence of more than one mode of governance but with one of them more pre-eminent.

Table 4.3 – Characteristics of the modes of governance

Mode of Governance	Determinant Characteristics
Clan, Corporation	1. Clans are determined by reciprocal and ongoing relationships. 2. Clans have as a key feature the interdependence of their members contrasting with markets - interactions of independent organisations - and hierarchies - with some dependent ones. 3. Clans do not have to be vertically integrated as a hierarchy. They "would rather be loosely coupled, which would allow them to retain their autonomy whilst sharing decision-making and risks." (Osborne, 1997, p. 324). 4. Clans do not mean an egalitarian society. There would be differences determined by the scarcity of resources. 5. Clan membership determines the acceptance of normative values and statements about the conduct of the clan members. They can be implicitly or explicitly stated.
Hierarchy	1. Hierarchy will promote the accountability of contracted service due to the fact that the lines of authority would be clearly specified and consequently known. 2. There is a high degree of stated tasks and their specificity in terms of the desired product and the obtained one, providing that they were built around specialist expertise. 3. Hierarchy threatens itself with its own excesses and lack of flexibility. 4. Hierarchies have costs that can be compared to the transaction costs of the market: time taken for decision-making and slowness in responding to changes.
Market	1. Price competition is the unique relevant mechanism present. Managers cannot exercise influence on it providing that it is a natural result from the operation of the forces of demand and offer. 2. The market condition determines that all organisations or groups can participate. The contracting situation is free for all. 3. Markets are not ever perfect; there would be failures to be dealt with, e.g. monopoly, monopsony or length[1]. 4. Purchasers and providers of services would need to deal with the transaction costs imposed by the market, e.g. the costs of the tendering and the performance-monitoring process.

Source: adapted from Osborne, 1997.

Key points in analysing market and hierarchies in the context of health organisations, public general acute hospitals in particular, are: 1 – the ambiguity of the measurement of individual performance; and, 2 – the coherence of goals, of the individuals, the clan and hierarchy and of the organisation. Ouchi, Lapsley, Ellwood consider the former more challenging than the latter. Based on the exposed circumstances, every organisation has to work on the reduction of the ambiguity of the measurement of individual performance, in order to access an acceptable level of opportunism. The same thought can be applied to the coherence of goals between individuals and the organisation. Ouchi (1980) suggests that market relations are acceptable and efficient when there is a low level of ambiguity over performance evaluation

and, bureaucratic relations will be efficient when both performance and goals are ambiguous and incoherent. In terms of tolerating high levels of ambiguity in performance evaluation and low levels of goal incoherence the clan form prevails.

To reduce transaction costs, to become more competitive or to survive, organisations have tended to reproduce or even create 'artificially' the market situation. The case of the internal market in Great Britain was an attempt to create it externally. Internally, some organisations have changed from the U-form structure to the M-form structure (see Thompson et al., 1991). This creates 'independent' internal areas, sectors or groups that simulate a market within the organisation (see Bourn and Ezzamel, 1987). Hospitals in Great Britain have lived this experience since Management Budgeting. Brazilian hospitals have just started a process of hierarchy and decentralization with the SUS.

Hospitals are seen as complex systems (Stacey, 1996; Ashmos et al., 1998). As pointed out by Ashmos et al. (1998, p. 12) "hospitals are high-knowledge organisations that operate in high-velocity environments and as such are dependent on professional workers for execution of the core technology". This makes hospitals a susceptible place for individual opportunism. Jones (1997) showed that the hybrid form of market used to the health sector in Great Britain encouraged hybrid forms of governance. The organisational response to the environment depends of the mode of governance and can be obstructed by it reinforcing the collectivism approach. Empirical evidence from the literature showed that competition using price information did not give appropriate answers to the internal market objectives in the 1990s partly because of the way managers exercised the purchasing function and contracting, and also, issues related to price mechanisms and techniques, which is more technical-rational (Ellwood, 1996a, 1996b, 2000).

Therefore, according to the discussion above, hospitals internal environment is divided essentially into two areas of knowledge or management reflecting the hierarchy and the clan, administration and health group respectively. Such a combination, and its decision-making process, reinforces internal complexity for hospitals. This complexity is built upon multiple issues, sometimes conflicting ones, considered by managers. Planning and control within hospitals require the meeting of the two areas because the clinicians are those who have

[1] This is controversial. It is possible to have different interpretation for the same phenomenon according to different theories, i.e. monopoly is not a failure considering neo-Austrian position (Osborne, 1997).

knowledge about the performance of their tasks (Weisbord, 1976; Freidson, 1985; Lapsley, 1993).

The clinical group, mainly doctors, or area is the major professional and informational supplier and is also the major influence on decision-making process. There is a lack of communication between managers and clinicians and also, there are different lines of actions adopted in similar circumstances. Ashmos et al., (1998) argues that these professionals essentially internalise models of problem solving and knowledge so that they can act more or less autonomously on the job, they control their own work, and they make decisions in accordance with their respective professions standards. This work is neither known nor understood by hospital managers with administrative background.

Chapter summary

This chapter reviewed the literature that supports the interrelation between the environment and hospitals in Great Britain and Brazil, discussed in the second and third chapters respectively. It provided the first part of the theoretical support for the understanding of the middle management mediation role. It also sustained the exploratory discussion of the use of cost information in planning and control within public hospitals.

Therefore, contingency theory explains and supplements the study of healthcare structure and modes of governance within hospitals. However, it does not involve the explication of transactions between organisational actors, opportunism and bounded rationality, which is fundamental to discussion of the presence of certain structures or modes of governance within hospitals such as the clan and the hierarchy. This chapter used modes of governance to cover this situation. It was also used to reach a position to discuss and justify the analysis of modes of governance as an agent that permeate and interferes with managerial action in public hospitals.

The next chapter completes the literature review embracing planning, control and cost information use.

Chapter 5 - Planning, control and cost information use

This chapter completes the literature review. It is divided into 3 sections, i.e. Planning and Control Framework; Decision-Making, Problem Solving Framework; and Cost Information Framework.

The reason to include decision-making and problem solving in this study of planning and control is because they are not independent or mutually exclusive actions. Quite the opposite, the output of planning and control processes can be decisions and problem solving. By its turn, decisions and problem solving are demanded when performing planning and control (Emmanuel et al., 1993). Thus, they are intertwined and will be presented. The last part of this section presents the literature about cost information.

5.1 Planning and Control Framework

A literature review focusing on planning and control has shown that special attention on these managerial dimensions has been paid since the beginning of the century. These managerial dimensions have received considerable consideration by academics and professionals within organisations (Shafritz and Ott, 1992). Planning and control have also been continually considered as elements to be directed connected with organisation's vital indicators. They are frequently related with performance measurement, Value for Money, efficacy, and efficiency (Hood, 1991; Ballantine et al., 1998).

This research seeks a comparative study of the managerial perception of the use of the cost information for planning and control within hospitals in Great Britain and Brazil. Thus, the study is interested in planning and control as managerial functions or dimensions, more precisely in the intermediate level. It is known that these functions cannot be perfectly disassociated in the day-by-day managerial exercise because they are firmly intertwined. However, to some extent, they can be defined as being different dimensions or functions.

5.1.1 Planning

Several planning definitions set out the interrelation of activities and outputs or goals using predictive models as forecasting tools. These definitions can be applied for strategic, tactic or operational planning (see, for example, Ackoff and Russel, 1970; Ansoff and McDonnel, 1993). It is not the objective of this thesis to discuss all possible variances in planning or control definitions but the scientific rationalism and the alternative strategies to it, i.e. complex rationalism, applied to public sector in general and hospitals in particular.

Planning and control has also been quite often used (or taken) as budget or budgetary action (CIMA, 1989). One cannot ignore such an approach due to the number of authors who make this consideration. Emphatically, planning has been associated with short term and long-term decision-making, the former is associated with a year budget and the latter with a financial strategic plan (CIMA, 1989). However, a certain number of authors has developed that the unintended restriction of the subject to an accounting based framework should be superseded and the focus needs to be broadened (Hofstede, 1981; Emmanuel et al., 1993; Otley, 1994, 1995; Kloot, 1997).

Based in the scientific rationalism theory provided by rational economic approach and decision-making, Banfield (1973) established a model of planning that can be used as a starting point of the discussion. This reflective and cognitive model is operationalised in three phases:

1. decision makers relate all possible 'means' according to desired objective;
2. all possibilities or 'ends' are drawn from the 'means';
3. the optimal 'mean' - set of 'ends' is chosen.

However, Simon (1976), with the nominated 'satisfactory' theory, sets out a different or a refinement approach to the rationalist model, being more pragmatic (or behaviourist). His perspective, as well as the preceding one, will be further discussed ahead in this chapter.

The rational economic planning model, as being an operational activity produced by a 'separated' or 'an apart' reflective (cognitive) phase, is quite often identified in books. Dant and Francis (1998, p. 3) put that "this tradition sees planning as a branch of applied science,

according to which the role of the planner is bring technological knowledge and tools of rational inquiry to bear upon problems of policy implementation and decision making."

The critique of the rationalist approach to planning process is based on the necessity to recognise its sociological, political power dimensions. Such dimensions are not merely an external 'contamination' of the rational planning (Dunleavy, 1980; Glorie et al., 1990; Baligh et al., 1990). Taking from previous sections of this Chapter, planning occurs in a social context, perfectly contingent, and can be argued its aseptic reflective and rational process (see for example, Lindblom, 1973; Etzioni, 1973; Davidoff, 1973; Benveniste, 1989; Dant and Francis, 1998; Mintzberg, 1994).

Such a debate has echoed in the management theory. Mintzberg (1975) in his classical work about the job of executives posed the pragmatic aspect of planning and argued the pure reflective aspects of the classical theory. Dant and Francis (1998) stressed that

> "the ideal model of the reflective and systematic manager/planner has been more substantially undermined by empirical studies that have led to pragmatic models of planning in management that accept it as a contingent process" (p. 4).

Contemporary authors have distinguished such an approach. They recognise and emphasise the observance of contingent aspects in planning and decision making on service sector and consequently, by extension, healthcare systems (Emmanuel et al., 1993; Brignal, 1993, 1997). Reinforcing this point, instead of giving a recipe, with a set of procedures to be followed, for 'good planning', they prefer the presentation of histories, strongly based on field research and experience, where they show what was done and had success and what was done and had not success. The contingent approach is imposing that decisions of managers are taken pragmatically substantiated by circumstances of the moment (Mintzberg, 1975).

One can note that such a dichotomy does not constitute opposite forms of planning. Both forms – a rationalist planning and a contingent planning - are mutually implicative (Bittner, 1982; Dant and Francis, 1998). The formally defined planning process can be more related with keeping hierarchical (or other) form of control and accountability than with the creation of strategies, directing future actions and predictive models, but this does not impede the presence of pragmatism on it.

The term planning can be focused in other ways - where variables or elements that provide the basis to the actions are not only the financial ones but also, alternatively, non-financial variables (Emannuel et al., 1993; Ballantine et al., 1998; Dant and Francis, 1998). This fact gives evidence that planning is not linked just to a certain area of knowledge, and consequently brings other judgements and strategy.

A useful definition for planning suggests an action where people will interact "for the purpose of previewing a task and co-ordinating their activities towards accomplishing it effectively" (Dant and Francis, 1998, p.1). The act of planning recognises the people's action with naturally different objectives, goals, perspectives and definition. As any other planning definition it underlines the necessity of predictive models, as presented in the above citation – 'previewing a task'.

Thus, related to hospitals management, goals and predictive models ensure key points to the consideration of two developments, named: the rationalist/prescriptive, and the pragmatist/descriptive approach. They are competitive but one does not exclude the other. Dant and Francis (1998, p.2) put that

> "the first is a rationalist or cognitivist conception that involves separating knowledge from action. Human conduct is conceived as 'grounded' in the systematic knowledge generated through rules for cognitive procedures (identifying goals, proposing lines of action, estimating consequences) which the human actor should follow."

These procedures are related to scientific rationalism and functionalism.

The second one – the pragmatist approach - is considered more based on practices rather than rules. Being it a pragmatist or situation(ist) conception, it emphasises the contingency and incompleteness of knowledge (Rorty, 1982, 1989; Dant and Francis, 1998). Thus, in this case the action does not follow the anticipated or fore knowledge used for planning.

The contingency can be responsible for the split between rules (rationalist/prescriptive) and practice (pragmatist/descriptive) because it considers circumstances more 'non-rational', i.e. more or less intended, arbitrary, uncontrolled or unanticipated. Such circumstances - that affect action - cannot be understood as guided by an underlying principle or a set of rules for reasonable (rationalist) conduct; meaning that "action is ultimately 'groundless'." (Dant and Francis, 1998, p. 2). This approach provides a new point of view to planning because it exerts direct implications on the control process.

Such developments should be considered within health care, particularly within hospitals. Hospitals contain a social context divided into two different classes, what is enough argument to consider an environment of complexity and under uncertainty. Also, the knowledge and action roles are strongly defined, e.g. between medical and administrative areas, and not equally distributed between managers. This justifies the unbalanced composition of forces and participation of such elements in terms of planning processes. It is important to highlight that the expertise and knowledge used on activities are not the property of the organisation but the clan.

The operational knowledge is a clan or corporate domain and, as seen, knowledge plays an important role in planning, due to its determinant influence on action. Tsoukas (1995) posed a distinction between two forms of knowledge: propositional and narrative. The former tries to document, systematise, and establish the rules to be followed to attain objectives. The latter is more exercised as experience and situations shared, 'narratively' dispersed within the community able to understand its content. Tsoukas (1995, p. 21) set out that "community shares a set of narratives through which it articulates its self-understanding, its historicity and identity." The narrative knowledge provides the contingent context for action within an organisation (Dant and Francis, 1998).

The mainstream organisational behaviour has defended the propositional knowledge as being the significant form inside the organisation and consequently guiding their planning and control actions. This knowledge is based on formulation of conditionals "if, then" statements and consequently "are predicated on the assumption that the phenomenon they refer to is standardised, composed of objectively available elements which can be re-presented via an abbreviated formula" (Tsoukas, 1995, p. 4). Such an approach is fully echoed on control statements and planning based on functionalism and scientific rationalism/prescriptive terms. Moved by this fact, managers and system's designers have been motivated by the view that more judgement, intuition and other skills have 'flawed' and 'biased' organisational systems (Glorie et al., 1990; Baligh et al., 1990) and, therefore, they should be replaced by scientifically derived knowledge and consequently, action (Tsoukas, 1995), with reflexes on accounting information systems.

The influence of the narrative knowledge within hospitals is empirically observed. As posed by Tsoukas (1995, p.33)

> "narrative knowledge is an indispensable input to effective action because organised contexts, in addition to being institutions, they are also practices. As practices, organised contexts are communal traditions having their own standards of excellence as well as their own internal goods which only participants can judge and achieve".

At the same time, it is known that professional based on practices predominantly conducts hospitals' services, and demand 'participating in the practice' to achieve 'internal goods' (MacIntyre, 1985). This point impacts the modes of governance because "those who lack the relevant experience are incompetent thereby as judges of internal goods" (MacIntyre, 1985, p.189). Clan members are the unique people able audit their actions favouring opportunistic behaviour. It seems coherent to assert that the clan prefers the narrative than the prepositional knowledge. The reason is that the prepositional knowledge is documented and gives opportunity to the emergence of forms of control and gives power to the hierarchy.

In terms of planning and accounting, it can be said that some attributes are considered vital: provision of relevant information for decision-making, the search for a rational allocation of resources and the maintenance of institutional accountability and stewardship (Burchell et al., 1980). Despite the arguments posed in favour of a normative and functionalist accounting, it was already told in this thesis that a gap has formed between the roles and practices. The literature appoints that the former has been used to identify disparities of the latter and, in consequence, correct it and this is a return to the rationalism. However, an influence of the practice on the roles has been recognised, as well as the beginning of a reappraisal of pre-given imperatives of accounting (see Burchell et al., 1980). Pressured by the necessity of other situations and other interpretations different than 'rational' ones, accounting has developed an ability of self judgement and criticism, accepting and considering the intrusion of other disciplines what has been reflected in cost information (Emmanuel et al., 1993; Otley, 1995).

5.1.2 Control

Anthony (1965), in his seminal work, divided planning and control systems into three groups: Strategic Planning, Management Control and Operational Control. He defined Operational Control as being

> "the process of assuring that specific tasks are carried out effectively and efficiently. ... It intends to convey the idea that operational control is to be distinguished from management control in at least the following key ways: (1) Operational control is concerned with tasks ... whereas management control is concerned with individuals, that is, managers. (2) The tasks to which operational control relates are specified, so that little or no judgement is required" (p.18).

Anthony (1965) also put that is

> "easy to identify two rather different types of planning activities in an organisation. One is the type of planning associated with the control process, an activity related to the ongoing administration of the organisation. The other type is identified by terms such policy formulation, goal setting, and top management planning. ... We identified such this latter planning activity as the first of our main categories and labelled it Strategic Planning" (p. 15).

In certain parts of this work the term Management Control should be used meaning planning and control in tandem as defined by Anthony (1965). The Strategic Planning is not addressed in this research. Attention must be given to Anthony's identification of two types of planning activities because the first type is focused on this research.

Earlier, Anthony's ideas caused a rationalist focus on planning and control. More recently, some authors brought more attention to the behaviourist side of Anthony's position and explored other contingent aspects of planning and control (Ansari and Euske, 1987; Ansari and Bell, 1991; Emmanuel et al., 1993, Otley, 1994). Otley (1994) set out that "Anthony's definition is becoming outdated and is potentially obstructive to development of the field" (p. 294). This can be observed in terms of public hospitals. According to the literature presented so far, the definition of operational control whether applied to hospitals can be an enormous fallacy. This point is where clinicians exert their knowledge and necessitates to be revisited and discussed, what is one of the objectives of this thesis is.

However, it is possible to identify strands of the three groups above described on each organisational level. The presence of them tends to be well represented according to the organisational management structure. The top managers tend to dedicate more to strategic planning and the operational level managers tend to dedicate more with control management. The middle managers tend to participate in all three stages, emphatically the second one, i.e. management control (Choo, 1995).

The literature has also shown certain coherence on definitions of planning and control. Planning is emphatically related with expected results and, by its turn, control is related with the maintenance of the elements or mechanisms in order to achieve these results (Emmanuel et. al., 1993). Control can also be understood as being a consequence of a planning process.

Planning demands the presence of a predictive model and this predictive model imposes anticipation and 'creation' of the future, i.e. generative learning, instead of just reacting to the past, i.e. adaptive learning. In turn, feed forward control is related to the predictive model and feedback with inputs.

It has been recognised that both generative and adaptive learning are essential for environmental adaptation in contingency terms (Senge, 1990; Kloot, 1997). The healthcare system in Great Britain has emphasized the generative learning when proposed the involvement of a new technology, i.e. benchmarking.

Hoque and Hopper (1994) identified the presence of four main theoretical approaches to control and considered them pertinent but not sufficient in themselves: rational, human, cultural, and institutional (see Table 5.1). Actually, one can understand these four approaches as being a response to posed criticisms, rather than different types of control. It can be observed that each following approach adds a new perspective on the precedent causing, this way, an expansion of its boundaries. The last one encompasses all the others.

Table 5.1 – Planning and control main characteristics

Dimension	Main points	Substantial element	Evolutionary aspects
Planning	Expected Results or 'ends'	Predictive model	. Rationalist . Contingent
Control	Comparison and Co-ordination	Process and causes	. Rational . Human . Cultural . Institutional

Source: adapted from Hoque and Hoper, 1994.

The rational perspective privileges hierarchical controls, bureaucracy and the perfect relationship between 'means' and 'ends' (Anthony, 1965; Hopwood, 1987) and it is fully supported by the rationalist form of planning and the applied propositional form of knowledge. After that, more behaviourist approaches are extended and get involved in all other perspectives.

The second perspective is given by the understanding managers' behaviour and motivation and the necessity of its incorporation as pertinent elements to planning and control (e.g. Maslow, 1954; Argyris and Schön, 1970; Simon et al., 1954; Brownell and Dunk, 1991).

The third perspective entangles the manager's behaviour with cultural features of organisation (e.g. Blumer, 1978; Hopper and Powell, 1985; Lapsley, 1993; Ansari and Bell, 1991; Ellwood, 1996a, 1996b).

The last one extends the control's boundaries to involve external institutional factors such as political economy aspects (e.g. Cooper and Sherer, 1984; Bourn and Ezzamel, 1986, 1987; Emmanuel et al., 1993; Dewing and Jones, 1994; Ashmos et al., 1996; Ellwood, 2000). Hospitals should be involved with this last type of control. It is well known and has been discussed in this thesis that external factors have impacted hospitals management.

Control systems are established processes aiming the fulfilment of goals or objectives, organisational or departmental. In healthcare and hospitals goals of the management structures, i.e. clan and hierarchy must be considered as well. Control systems can be said as being a group of mechanisms, ordered to fulfil the necessary conditions to reach predicted objectives of the organisation (Wilson and Chua, 1993; Emmanuel et al., 1993).

It is possible to consider two main blocks of control systems: cybernetic and non-cybernetic (Kloot, 1997, Marginson, 1999). Essentially, the cybernetic model of control is divided into three parts: inputs, process, and outputs. A stream of inputs will be converted into a stream of outputs by a controlled process. This model demands the presence of a predictive model, usually the linear one, to be exhaustively compared with the process. Two mechanisms are present in such a model: feedback and feed-forward. The feedback mechanism is applied when an expected result was not achieved. In these terms, corrections should be made on the causes, which involves inputs or process aiming to eliminate the failure. One can note that this is a weakness of such a mechanism providing that the error has been occurred and the management can be compared with a sort of autopsy.

The time passed between error detection and repair is a determinant factor to the establishment of the feed-forward mechanism. In human organisations an error may not be detected for a long period of time and its correction may be long and slow. The feed-forward is based on actual outputs being systematically compared with expected objectives based on a predictive model of the future. It involves characteristics of professionals involved and equipment employed in the process. An essential difference between feedback and feed-forward is that the latter generates a control action to minimise or eliminate the error before

its occurrence. The feed-forward mechanism is interrelated to the planning and the predictive model. Posed this way, feedback can be associated with a pre-determined model rather than a predictive model (Emmanuel et al., 1993).

The cybernetic model is normally associated with lower level systems. However, in terms of hospitals it reaches other levels mainly because the high degrees of standardisation. It is important to note that in hospitals, the 'lower level systems' are those systems closely related to doctors and patients. In this situation the presence of more complex decision-making is expected. The mismatch or deviation occurred between an expected outcome and an actual one for an activity or process triggers a control action to reduce or remove that error. There are two points to be considered, the difficulty of error detection at the lower level systems and the complexity of the forms to tackle the deviation.

Non-cybernetic models of control are based on the fact that not all processes include a coherent predictive model. This fact tends to be aggravated in a complex environment. If the predictive model fails or is poor other than the cybernetic form of control is required (Otley, 1994; Kloot, 1997; Marginson, 1999). The correction of any deviation involves a more heuristic approach.

Table 5.2 – Types of control within hospital middle management

Key elements	Models of control	Types of control
Goals coherence and less changing of the predictive model	Cybernetic models	1. Routine
		2. Expert
Values and culture of actors, different goals and use of more predictive models	More complex and less deterministic model is demanded, non-cybernetic	3. Trial-and-error
		4. Intuitive
		5. Judgmental
		6. Political

Source: adapted from Hofstede, 1981.

Hofstede (1981) and Macintosh (1994) control typologies showed that different control types are based on the goals, means-and-ends and nature of activity, and should be applied to hospitals management. Hofstede (1981) established that control depends on four criteria: goals or objectives, outputs, effects of interventions and activities. And there are six different types of control when activities are observed. Considering the preceding discussion in this thesis and taking into account the work of Macintosh (1994) and Hofstede (1981) it is possible to identify the types of control that should occur within hospitals, see Table 5.2. Figure 5.1 shows the how these forms of control emerge.

The private sector experienced difficulties itself in terms of control, e.g. the service sector, where 'indirect' activities are essential, the control is not readily applicable (Hofstede, 1981; Ballantine et al., 1998). Therefore, the public health sector is recognised as being realistically a sensible area to control.

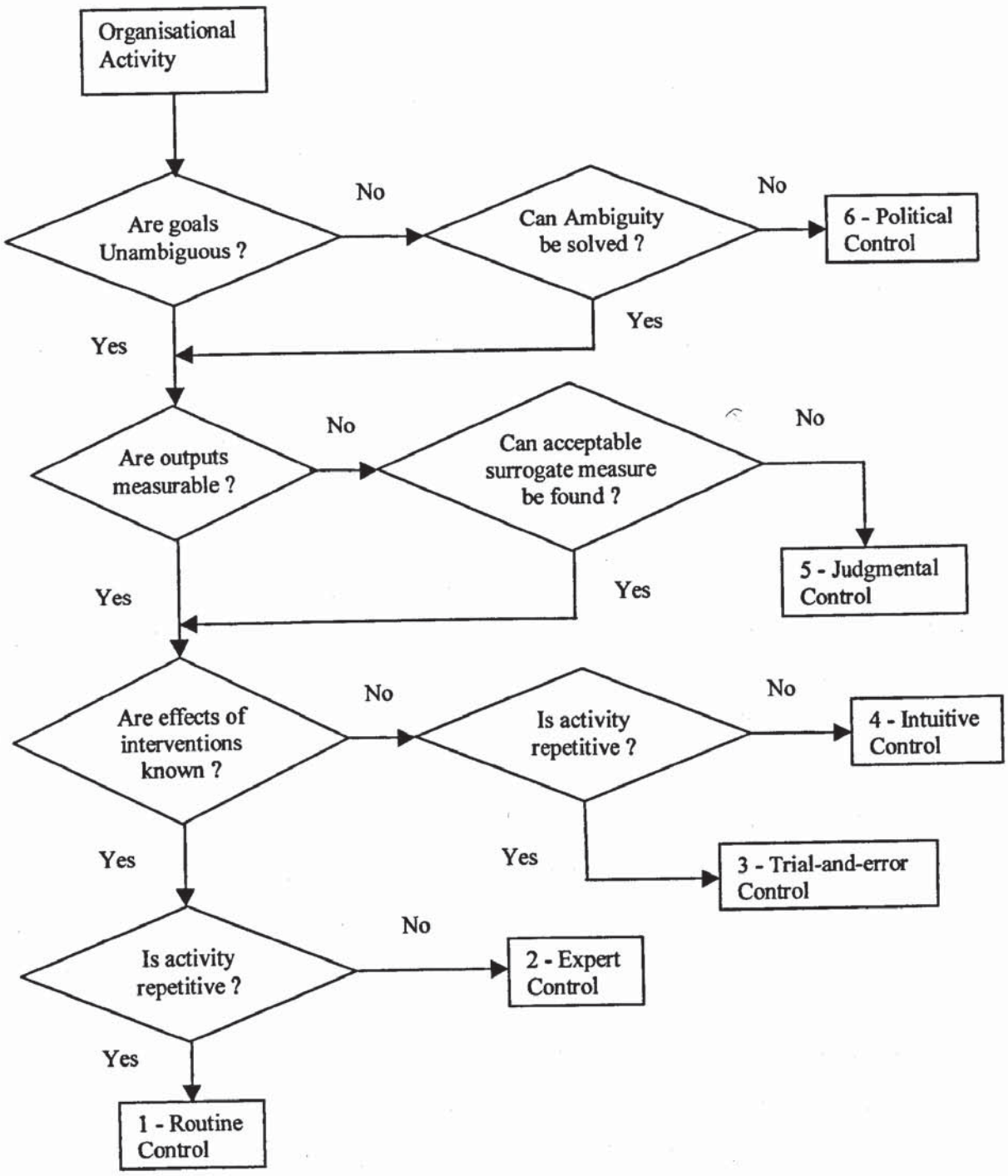
There are quite different activities within the very same organisation demanding different forms of control. This study concerns with activities developed by hospitals middle managers what certainly do not eliminate such amount of dispersion. To make the term control more understandable, Hofstede (1981) broke the organisation into activities. Those activities are posed for objectives or goals and they can be ambiguous or unambiguous.

Thus, control demands a posed goal or target. It can go from totally non-ambiguous to totally ambiguous passing through intermediary situations. It can occur due to conflicts of perceived (clear or non-clearly) interests and/or values among individuals or groups. It is affected by the amount of knowledge about the activities or 'means' to reach those targets or 'ends', too.

It can also be caused by the obsolescence of the targets or 'ends' facing a turbulent environment, without the immediately imposition of new ones. This last one can be exemplified when "new drugs that completely change the role of hospitals in treating certain diseases, may call for new objectives; but at the same time, many forces within organisations and within their environments push for a continuation of the old objectives" (Op cit., p. 194)

In terms of outputs, they can be measurable, non-measurable or only partially measurable. Control means outputs being compared with desirable (planned) results or the use of predictive models. The degree of measurability of the outputs will determine the degree of success of the activities. The result will affect the efforts posed on the activities. In some cases, only inputs are measurable, given the indeterminacy of measures and comparable outputs. This is particularly controversial in hospitals. Emmanuel et al. (1993) set out that "the output being difficult to control the element of control will move from the outputs in direction to the inputs of the system" (p. 56).

Figure 5.1 – Emergence of types of control



Source: adapted from Hofstede, 1981, p. 196.

In terms of effects of management interventions, they are known or unknown. The same situation occurs, i.e., they are extremes and intermediary situations can take place. Effective management must be taken if the outcome does not meet the set of targets. This means that the manager must know how to intervene in order to conduct the correction and the reactions caused by his intervention within the organisation and environment. It is known that the

Management Budgeting in British hospitals, for example, "was made responsible for tensions" (Rea, 1994, p. 90).

Finally, in terms of activity, it can be repetitive or non-repetitive. There is a consensus that all repetitive activity conducts to a learning situation. Despite the frequency of the repetition – daily, weekly, once a year – it should bring some evaluation in terms of pragmatic expertise (Tsoukas, 1995). If the activity is non-repetitive, there is no learning effect. The composition of the typology for management control posed by Hofstede (1981) is reproduced in Figure 5.1 and the outputs can be compared with Table 5.2 contents.

Hofstede (1981) put an analogy between organisational structure and types of control:

a. Lower Level management – Type 1 and 2;
b. Middle Level management – Type 3 and 4; and,
c. Higher Level management – Type 5 and 6.

Therefore, using mechanisms to obtain the level of goals coherence and use of different predictive models is possible to identify the types of control exercised within hospitals and, consequently its appropriateness and, equally important characteristics of the process.

According to Macintosh (1994), the cybernetic control will fit in a bureaucratic situation where hierarchies, rules and records prevail (see Table 5.3). As can be seen the objectives, outputs, and the nature of activity are unambiguous or known in this case. A non-cybernetic model of control is demanded when these conditions are not filled.

Given the above discussion control can be assumed as being a system designed to both - ensure that organisation adapts to the environment and is able to play a proactive role within the organisation (Hopwood, 1987; Dent, 1990; Otley, 1994; Kloot, 1997).

Reinforcing such a point of view Kloot (1997, p. 51) strengthened that

> "control systems are therefore concerned with planning, the actions taken to implement plans, the monitoring of both these actions and the plans and any necessary modification to the plans. ... planning, decision making, motivating, co-ordinating, communicating objectives, providing feedback and integrating activities within complex organisations, indicating the broad nature of control, not limited to accounting and budgeting systems".

Such a position must be buffered by the fact that where objectives, outputs and nature of activity are unambiguous or known, the scientific rationalism will supersede any contingent approach.

Table 5.3 – Macintosh typology

Control type	Objectives	Outputs	Nature of activity	Effects of intervention
Bureaucratic (Hierarchies, rules, records)	Unambiguous	Unambiguous	Known	Known
Charismatic (Thrives on change)	Unambiguous	--	Uncertain	Uncertain
Market (Market, share, profit)	Unambiguous	Unambiguous	--	--
Tradition (Belief that all members' best interest served achieving global concerns)	Unambiguous	Unambiguous	Uncertain	Uncertain
Collegial (administrators subject to controls by collegium)	--	--	Ambiguous	Understood

Source: adapted from Kloot, (1997).

Summarising, scientific rationalism can be considered the starting point for all debates about planning and control. At first instance, it is considered perfectly possible to discern comprehensive scientific rationalism elements in all planning and control processes in all public organisations. However it must be understood that the planned process can assume different unforeseen strategies due to external pressure and political agendas distracting and distorting earlier rational intentions (Haynes, 1999; Ellwood, 2000).

5.2 Decision-Making, Problem Solving Framework

According to points already presented, a complex environment will make hospitals 'complicate' themselves internally or "responding to external complexity with greater internal complexity is generally considered to be necessary from a contingency theory perspective of organisations" (Ashmos et al., 1996, p.2). Thus, external complexity is responsible, to a large extent, for the uncertainty level faced by the hospital manager. The uncertainty is resultant of the large amount of relevant environmental variables and the complex relationship between them. The internal complexity is represented and manifested in the management structure, i.e. modes of governance. Also, it interferes in the fluidity and clarity of the systems; explicitly planning, control, and decision-making and problem solving, which involves processes and multiple/conflicting goals (Lapsley, 1993; Ashmos et al., 1996, 1998, 2000).

5.2.1 Decision Making

The decision-maker tries to obtain optimal results according to the scientific rationalism. Therefore, he needs the most complete and unbiased view of 'means' or alternatives of action or activities and also, the group of 'ends' or outputs or consequences that succeed each one of these alternatives. This fact causes a situation, at least, uncomfortable due to the involvement of elements of risk and uncertainty, settled either by the environment knowledge or by the identification and valorisation of the consequences that emerge from the chosen option instead of others.

This thesis uses two important concepts which are directly applied to decision-making and problem solving processes, i.e. rationality and complex rationality. Simon (1976) discussed the concept of rationality in decision-making. This author set out that "rationality is concerned with the selection of preferred behaviour alternatives in terms of some system of values whereby the consequences of behaviour can be evaluated" (p. 75). The same author posed that "organisation permits the individual to approach reasonably near to objective rationality" (p. 80) which can be described as being "a decision may be called 'objectively' rational if *in* fact it is the correct behaviour for maximising given values in a given situation" (p.76). Emmanuel et al. (1993) discuss the term rational in this sense

> "strictly, decision-making is only one aspect of the wider process of management control; objectives need to be defined before rational decisions can be made, the need to make a decision has to be brought to a manager's attention and, once made, the decision has to be implemented and its implementation monitored. Nevertheless, decision making is a vital aspect of the overall control process involving the identification of alternative courses of action, the prediction of their likely effects and the selection of the best alternative" (p. 127f).

Therefore, this approach of rationality should be considered as being appropriate for this thesis.

Going further, Simon (1976, p. 76f) posed that a decision

> "is 'subjectively' rational if it maximises attainment relative to the actual knowledge of the subject. ... is 'deliberately' rational to the degree that the adjustment of means to ends has been deliberately brought about (by the individual or by the organisation). ... is ' organisationally' rational if it is oriented to the organisation's goals ... is 'personally' rational if it is oriented to the individuals goals".

Simon (1976, p. 75f), after explaining these different forms of rationality of decision-making, stated that "the only way to avoid, or clarify, these *complexities* is to use the term rational in conjunction with appropriate adverbs", e.g. 'subjectively', 'personally', 'deliberately'.

Seeking to avoid an unnecessary profusion of adverbs, the term complex was borrowed from Simon to refer to a possible form of rationality different from the 'objective' one. However, when necessary this work will employ an adverb as recommended by the author. Complex rationality replaces, for example, 'subjectively' or 'personally' rational, because, in these terms, opportunism and different objectives can emerge.

Therefore, the word rationality, as it is employed in this thesis, is used to refer to the objectively rational process. In turn, complex rationality is employed not merely replacing 'objectively' or meaning 'subjectively' but it is where there is more than one form of rationality involved in the process, e.g. that 'objective' and 'subjective' rationality exists as well as 'personal' rationality. An example would be that a Brazilian clinician may be making decisions that meet his individual goals and/or the organisations.

In accordance with a state that needs an alteration and having more than one alternative of action, the decision-maker should choose one or a group of them (if the alternatives do not exclude each other) following certain rationality, limitations and restrictions. As Simon (1976, p. 4) posed

> "at any moment there are a multiple of alternative (physically) possible actions, any one of which a given individual may undertake; by some process these numerous alternatives are narrowed down to that which is in fact acted out. The words 'choice' and 'decision' will be used interchangeably ...".

Succinctly, one can say that to decide is to choose. A decision can be defined as a choice between given alternatives or procedures or opportunities.

According to Mintzberg (1975), the decisions vary between two points, where at one extreme, they are considered voluntarily innovative, whilst at the opposite one, they are considered involuntarily reactive. It can be established a parallel with the continuum defined by Simon (1976), i.e., the decisions vary between two extremes of an imaginary line denominated non-programmable and programmable decision.

The programmable decisions are considered routine and fully comprehensive models, i.e. algorithms, formulae or rules can be applied. Activities, outputs or the relations of cause-and-effect are of low uncertainty. When the level of uncertainty about these 'means' and 'ends' causes a loss of 'programmability' the decisions start to be less susceptible to the application of comprehensive models and non-routine decision-making arises.

In terms of non-programmed decision-making Emmanuel et al. (1993) set out

> "a non-programmed decision is one that has to rely upon the judgement of managers because there is no formal mechanism available for predicting likely outcomes. That is, in programmed decisions the means-end relationships involved are sufficiently well understood for instructions to be confidently given as to how tasks should be carried out in order to achieve a given objective" (p. 15).

This is not the case in the case of non-programmed decision-making. Furthermore, in a programmed situation "the predictive model is explicit and available to managers; their subordinates may thus be instructed what to do, and how and when to do it" (ibid). These authors continue, "in the non-programmed situation, predictive models are only implicit in the minds of individuals and may be better developed at junior rather than senior levels of the organisation" (ibid). This research accepts these approaches..

Considering the use of predictive models, Emmanuel et al. (1993) posed that "the identification of alternative possibilities is a vital first step and one involving creative and innovative thought" (p. 128). These authors agreed that this is an important stage of decision-making. Further, they set out:

> "the second stage, the prediction of outcomes that will follow from each alternative, has also received rather sparse treatment [from traditional textbooks]. Apart from the discussion of the application of statistical forecasting techniques, the prediction of the consequences of actions is assumed to be possible, but the process by which this is achieved is left vague" (ibid).

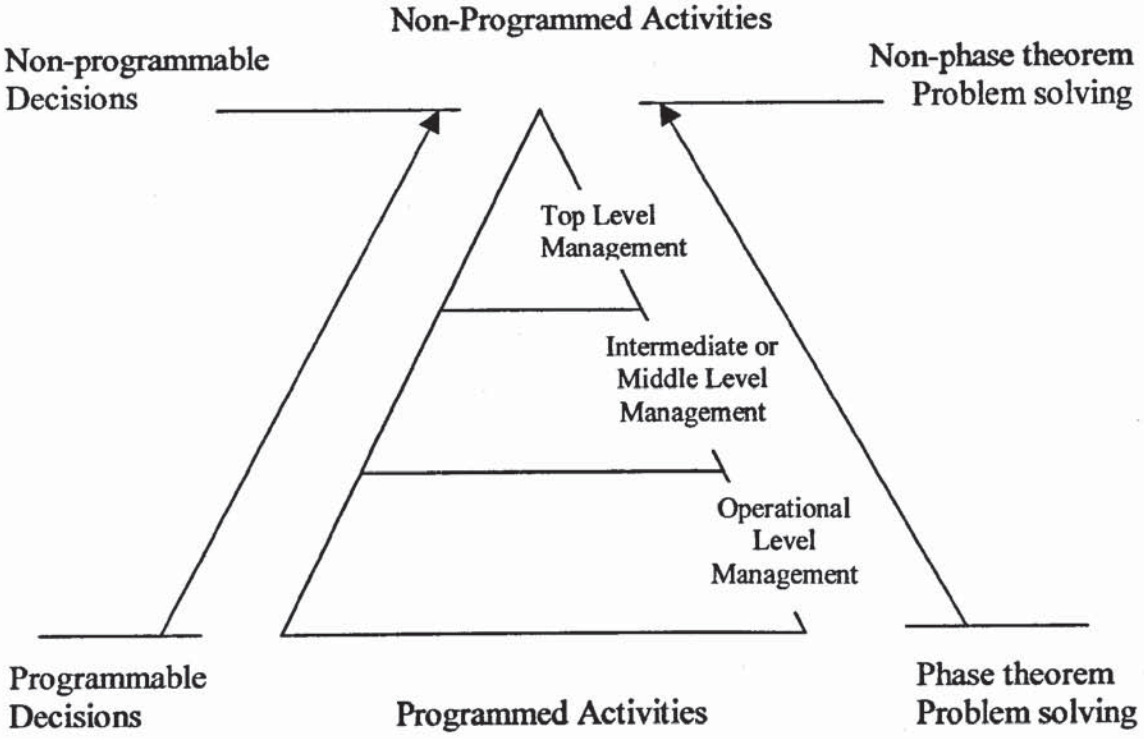
One of the reasons can be the volume of variables and forms involved in the prediction process. Emmanuel et al. (1993) consider that "at the heart of every control system there is a predictive model and this model is central to effective decision making. Before a choice between alternatives can be made, their likely outcomes must be predicted and values attributed to each aspect of them" (ibid).

Predictive models can be, for example, based on past experiences (linear), expectations of inflation (algorithmic), expectations of certain events (exponential), lack of suppliers, possibility of strikes, combinations of these and so on.

For each decision, depending on the degree of its programmable situation, there is a position in the continuum that matches it. As shown in Figure 5.2, the place where the solution can be found indicates the necessary information needed and the structural position of the manager within the organisation (Katzner, 1999). Looked at it in this way, it is expected that the intermediate level managers in British and Brazilian hospitals will have to cope with the presence of programmed and non-programmed activities to varying degrees but they can be

expected to make fewer programmable decisions and employ less phase theorem problem solving than lower level managers. (see Rodrigues, 1984).

Figure 5.2 – Decision-making, problem solving within hospitals



Source: adapted from Simon, 1976; Katzner, 1999.

Decisions made within the organisations can be related to obtaining and distributing resources. It can be established certain differences between types of decisions related to scale or each kind of resource consumed (Katzner, 1999). Therefore, the hierarchy is a means of classifying a decision accordingly to its magnitude and importance. The decision can be classified as strategic, tactic and, operational giving the necessary support to the configuration of three different levels in the planning and control hierarchy: strategic planning, management control and operational control (Anthony, 1965).

Observing the connotation planning and control for the nominated levels, it can be considered that two alternatives co-exist in the same organisational level, with one of them being predominant. One of the basic objectives of classifying the decisions into a planning and control hierarchy is to allow the study of connections among them.

The managers at the intermediate level in the hospitals are considered the unit of analysis in the development of this work, mainly because they are more directly involved with the cost information as managerial indicators (system). As it was stated by Choo (1995, p.52)

> "between top management and the operatives are the line and staff managers who occupy intermediate levels of the organisation. Their knowledge bridges the requirements of the broad, long-term visions of top management and the detailed, tacit knowledge of the front line workers. Their knowledge fills the divide between strategic intent and operational reality."

Simultaneously, it can be cited the importance of the intermediate level managers in the formulation of strategic policies and its successful application. As Ashmos et al. (1998, p.7) argues

> "rapid and fundamental environmental changes have challenged managers of health care organisations to rethink their management practices. Many hospitals have responded to these turbulent environmental conditions by reaching further down the traditional hierarchy for strategic decision inputs. Increasingly hospital administrators are recognising that clinical professionals offer one kind of perspective to strategic decision situations and middle managers offer another".

However, intermediate level managers of the hospitals are under pressure doing the bureaucratic-routine tasks and absorbing claims from both operational and strategic levels. The managers at this level behave as if they were ruling small internal "islands". In the absence of planning and control, they have, indeed, an impediment to carry out their main duty, that is, translating the strategic thinking into operational actions and so, answer appropriately the environmental impositions or excitations (Lipsky, 1980; Choo, 1995; Anthony, 1965). Simultaneously they must preserve the technological domain (managerial and operating) and the knowledge obtained by the organisation as a whole. The information produced by the Operational Level is dispersed in the Intermediate Level and the knowledge is kept in the island that produced it (Ansoff and McDonnell, 1993). There is a significant loss of information and learning with the consequent loss of management technological domain. This is the most significant loss to the hospitals and health system as a whole.

It was said previously in this chapter that decisions and actions, defined or influenced by bounded rationality and opportunism, are considered factors of interference on contracting and, consequently, governance structure. Thus, the work with decision theory has to be, necessarily, selective. This is because the explanations about the decision making process go from the point where the human action is lead by the rational or economic model to the point where the human choices are anarchistic and of very difficult comprehension or the garbage can model (March and Olsen, 1976).

Therefore, the literature shows some coherence in presenting decision-making theories grouped in two possible chains of lines of thought:

1. First line: Economic (Banfield, 1973), Satisfactory (Simon, 1976); Social and Political (Lindblom, 1973; Etzioni, 1973);
2. Second line: Structural (Anthony, 1965); Empirical (Mintzberg, 1975); Theoretical (Thompson and Tuden, 1959).

5.2.1.1 Economic, Satisfactory and Social and Political

The first line of thought or 'Economic' approach is based on the market society and decisions should be made in circumstances of scarcity of 'means' and 'resources'. Thus, decisions have to be optimised through choices that meet economic requirements. The optimal standard is required and maximisation is pursued (Banfield, 1973). The choices are made following predetermined objectives posed by the decision actor. The decision making process is relatively simple, is just a question of maximising utilities within a situation where 'means' or activities and 'ends' or outputs can be anticipated. The final choice involves the selection of the course of actions that maximises the probability of attaining the best value in terms of preference. In this case, the logic of the decision-making process is underpinned by the consistency between 'means' and 'ends' from one side; and on the consensus upon organisation goals from another (Ouchi, 1977, 1979, Rodrigues, 1984).

Accounting systems, and consequently, cost information has been consistently designed focusing on economic use for decision-making. Traditional literature shows accounting as an impartial technology that represents the economic reality of organisation, as posed by Covaleski et al. (1993, p.65), "according to orthodox theorists, the purpose of accounting is to facilitate rational decision-making by faithfully representing the task technology or economic reality of the organization". Accounting is, to a large extent, seen as a reliable functional system intended to facilitate rational decision-making focusing economic efficiency.

However, in healthcare, due to its peculiarities, accounting has changed. Accounting systems have other dimensions e.g. 'case-mix' accounting, where financial and clinical dimensions are put together. The decision spectrum involving accounting information was broadened

demanding the study of other decision-making theories (Otley, 1995; Ashmos et al., 1998; Lowe and Doolin, 1999).

A second line of thought was established by Simon (1976, p. 272), based on organisational behaviour and adequate to the market society:

> "in actual organisation practice, no one attempts to find an optimal solution for the whole problem. Instead, various particular decisions, or group of decisions, within the whole complex are made by specialised members or units of the organisation. In making these particular decisions, the specialised units do not solve the whole problem but find a 'satisfactory' solution for one or more sub-problems, where some of the effects of the solution on other parts of the system are incorporated in the definition of 'satisfactory'".

The 'Satisfactory' approach tends to encompass more complex elements of the human nature, such as motivation and habits, and the social arena called organisation. In this case the relationship between 'means' and 'ends' is not clear as one could suppose. The final result and its implication on the organisational goal are not optimal or maximised, but 'satisfactory'. As posed by Simon (1976), "decisions reached in anyone part of the organisation enter as goals or constraints into the decisions being made in other parts of the organisation. There is no guarantee that the decisions reached will be optimal with respect to any over-all organisation goal" (p. 274). However, despite the re-elaboration of the rational Economic model, that Satisfactory model still keeping implicitly some significant points of the anterior, e.g. the credibility in 'means' and 'ends' or that objectives precede action.

The third line of thought can be delineated and posed as significantly different from the two precedents described. This one can be based on the conception of the organisation as being a complex social system, where the most significant element is the dynamic of the social interpretations and re-interpretations, which, by its turn, has its own logic. The organisation is a political, sociological arena (Pfeffer and Salancik, 1974; Pfeffer, 1978).

It is remarkably important to this research in hospitals, to say that, despite of being different lines of thought; they are not necessarily incompatible (see Rodrigues, 1984). The same issue, the economic rationality, for example, underpins the first and second approaches. The difference is due to the fact that in the first approach the detached rationality is of the individual. The actor is looking for his goals or objectives and contracting for them. In the second approach, the rationality is transferred to the organisation or shared within it. The third approach seeks to answer the social and political relationship. In this one, the sought

objectives reflex or try to reflex the game between organisational members, groups and categories within the organisation.

Lindblom (1973), talking in terms of policy making, paralleled two methods for decision-making: the rational comprehensive or Root method, and the successive limited comparisons or Branch method. The former is based on decision using rationality and implies, among other circumstances, the complete view of 'means' and 'ends'. The 'ends' are "isolated, then the 'means' to achieve them are sought" (Op cit., p. 405). The term comprehensive that integrates the first categorisation is due to the consideration of all characteristics involved in the decision.

The second method is characterised, among other circumstances, in a probable non-distinction between 'means' and 'ends', so "'means-end' analysis is often inappropriate or limited" (ibid). Thus, a permanent negotiation takes place within the units or between organisational members.

Due to be in constant negotiation, 'means' or activities and 'ends' or outputs are continuously reconsidered and, consequently, decision making is short termed and undertaken by a "succession of incremental changes" (Op. cit., p. 413). The word 'incrementalism' was coined to denote such an approach. Lindblom (1973) posed that complex problems or organisational decisions are made and remade continuously or in a 'muddling through' process. This will, certainly, interfere in the use of different predictive models.

Etzioni (1973, p. 217) established a 'third' approach to decision-making, involving policy making, after consideration that

> "in the concept of social decision-making, vague commitments of a normative and political nature are translated into specific commitments to one or more specific courses of action. Since decision-making includes an element of choice, it is the most deliberate and voluntaristic aspect of social conduct".

The author justified his 'third' approach posing that

> "rationalistic models tend to posit a high degree of control over the decision-making situation on the part of the decision-maker. The incrementalist approach presents an alternative model, referred as the art of 'muddling through', which assumes much less command over the environment" (ibid).

In other words, the author considered that the first one (rationalistic) is utopian and the second one (incrementalist) is conservative.

This author refers to his 'third' approach as 'mixed-scanning' and differentiated decisions into fundamental and incremental. The former involves activities and outputs of the actor in a general perspective, and the latter are considered within the context of the fundamental ones. The decision-maker reduces the non-realistic elements of the rationality, when he limits the variables demanded in fundamental decisions. At the same time, he supersedes the conservative tendency of the incrementalism, when he explores long-term alternatives. The author summarised that

> "thus, each of the two elements in mixed scanning helps to reduce the effects of the particular shortcomings of the other; incrementalism reduces the unrealistic aspects of rationalism by limiting the details required in fundamental decisions, and contextuating rationalism helps to overcome the conservative slant of incrementalism by exploring longer-run alternatives" (Etzioni, 1973, p. 225).

5.2.1.2 Structural, Empirical and Theoretical

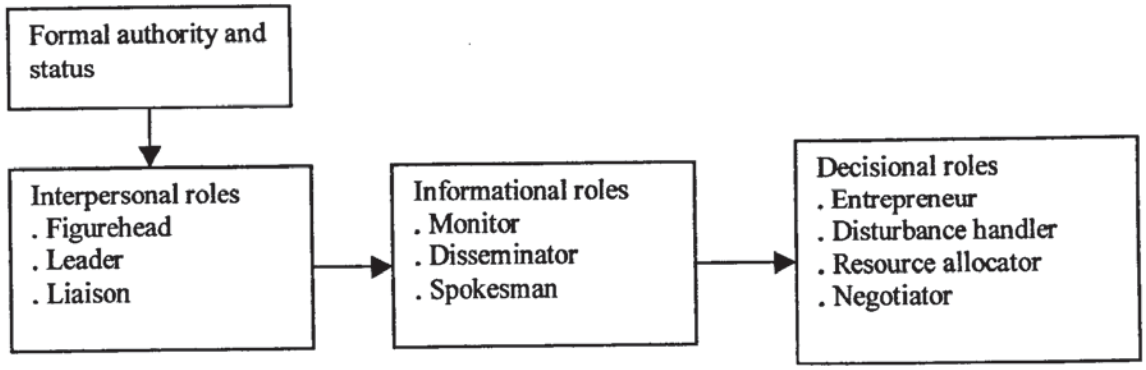
Another categorisation appropriately important can be established as being Structural, Empirical and Theoretical. The first one was determined by Anthony (1965) already discussed on this thesis in the section 5.1.2. Anthony (1965) put together goals, policies, and 'means' as well as acquisition, use and disposition of resources. He put the control and planning involving them in a structured way: strategic planning, management control and operational control.

Mintzberg (1975) posed the empirical model. He researched managers, including hospital administrators, to study the manager's time spent in planning, organising, controlling and directing. In his work, this author pointed a parallel within the managerial function accredited by the administrative theory and the observation *in loco* of what really occurs. One by one the author demolished the theoretical beliefs commonly accepted for those functions. The results showed that the managerial work executed were diverse, mainly in the form, from those presented by the theory. Among the related situation is important to be aware to some of his conclusions. Mintzberg (1975) posed that when confronted with the theory some real facts show a strong difference. The case applied in mainly two situations should be related in this research.

Firstly, the fact pointing that the manager is not a reflective, systematic planner as he was supposed to be: "study after study has shown that managers work at an relenting pace, that their activities are characterised by brevity, variety, and discontinuity, and they are strongly

oriented to action and dislike reflective activities" (Op cit., p. 66). Secondly, the fact that manager were strongly favour to the verbal media, e.g. telephone calls and meetings, rather than the aggregated information provided by a formal management information system. However, it is important to note that this second one, was applied to senior managers and this research targets middle managers.

Figure 5.3 – Manager's roles



Source: adapted from Mintzberg (1975).

The manager, in this case, is someone invested of a formal authority upon a well-limited organisational unit. From this formal authority derives the status leading to a personal interrelationship and, thus, access to information. The information obtained, in its turn, makes it possible for the manager to make decisions and propound strategies to the unit. Mintzberg (1975) describes the managerial function as being of various 'roles' not easily separable, see Figure 5.3. The author put that "information is not, of course, an end in itself; it is the basic input to decision-making" (p. 75) and make sure that "the manager plays the major role in his unit's decision-making system" (ibid). To the effects of this research it is important to highlight the decisional roles. The manager, as a decision-maker, plays four roles:

1. entrepreneur: is a voluntary initiator of change, seeks to improve his unit, to adapt it to changing conditions in the environment, exploiting an opportunity or solving a problem;
2. disturbance handler: depicts the manager involuntarily responding to pressures and solving problems;
3. resource allocator: as the name says, it is related to deciding who will get what, how and when, in the unit. He controls the all forms of resources; and,
4. negotiator: the negotiations, providing that the manager has the nerve centre information, are duties of the manager's job; maybe routine.

The decision-making and problem solving within hospitals are certainly more coherent using a more sociological approach and do not discharge the other occurrences already presented. Ashmos et al., (1998) set out that

> "in hospitals decision making requires the joint efforts of high knowledge workers, (e.g. physicians and nurses), as well as managers, because they have unique and exclusive knowledge about the performance of their tasks. These professionals essentially internalise arrays of problem-solving skills and knowledge so that they can act more or less autonomously on the job, control their own work, and make decisions in accordance with the standards of their respective professions. Much of this work of these clinical professionals is neither known nor understood by hospital managers" (p. 11).

In the third and more sociological approach, Thompson and Tuden (1959) when putting their ideas showed that the type of decisions are diverse when funded in the organisation's goals or interests. Each decision demands a particular strategy. There are various organisational structures to facilitate those strategies and those strategies determine the variation on the decision-making process.

In other words, these authors propounded a definition to what, for them, is understood as being a decision. This would not be just the final choice. But a wide process involving the activities that lead to the choice or knowledge or delimitation and evaluation of alternatives as well as the final selection (Rodrigues, 1984). The principal elements of the decision in this case are:

1. the alternative courses of actions (strategies);
2. the consequences of those alternatives or activities; and,
3. the evaluation of potential results in a desirability scale or outputs.

To develop a model, the ideas are concentrated in the second and third elements or 'means' and 'ends'. The second element represents the cause-and-effect relationship of a determined alternative. The third element represents a possible preference between the offered results by the alternatives given.

Hospitals are social systems or social arenas as mentioned before. Therefore, it is comprehensible that uncertainty exists about the 'means'-and-'ends' or cause-and-effect relationship largely because of the number of interests involved. In the same way, it is comprehensible that the hospitals members are not sure about their preferences about the apparent alternatives. Starting from the conjugation respecting knowledge about the beliefs

of cause-and-effect relationships with the preferences of possible results, Thompson and Tuden (1959) posed four decision strategies: computation, compromise, judgement and inspiration, see Figure 5.4.

Figure 5.4 – Uncertainty of objectives/goals and cause-and-effects relationships

		Uncertainty of Objectives/Goals: Low	Uncertainty of Objectives/Goals: High
Uncertainty of cause-and-effect	**Low**	Decision by Computation	Decision by Compromise
	High	Decision by Judgement	Decision by Inspiration

Source: adapted from Thompson and Tuden (1959).

The decisional strategy by computation can be observed when there is a clear understanding about objectives and also are clear the beliefs on the cause-and-effect relationships. The situation does not require appropriately a legitimate choice, but just the application of a specific solution, which can be repetitive and programmed. Weber's bureaucracy fits well in this case. As posed by Burchell et al. (1980) "this situation might represent what Simon has called structured decision making, where the Intelligence, Design and Choice phases are all programmed" (p.14).

The link posed by Burchell et al. (1980) between the Thompson and Tuden (1959) model and the roles, which accounting and other information systems serve in organisation, see Figure 5.5, can be used as a final integration. They made their model based on the characteristic of the information to reduce uncertainty. In this case, accounting system can be compared with 'answer machines' or a machine able to provide simple investment appraisal methods, credit control, stock control and costs systems. In this case, the algorithms, formulae and rules to solve problems are fully understood.

Figure 5.5 - Uncertainty of objectives/goals and cause-and-effects relationships: contribution of accounting systems

		Uncertainty of Objectives/Goals: Low	Uncertainty of Objectives/Goals: High
Uncertainty of cause-and-effect	**Low**	Answer Machines	Ammunition Machines
	High	Learning Machines	Rationalisation Machines

Source: adapted from Burchell et al. (1980).

The decisional strategy by judgement implies the consensus about desired 'ends' or outputs, but increased uncertainty about the 'means' or activities to reach them. In this case there are

two roles played by accounting. One of them is understood as an attempt to reduce the uncertainty degree by an investment in the advancement of calculative system – still being based an 'answer machine'. In another way, it is a 'learning machine', or accounting systems are expected to act as Decision Support Systems incorporating abilities such as 'what-if' models, access facilities, and ad hoc analysis. In terms of structure, the collegiate should be considered in this case, due to the necessity of stated interests of all groups together and proceed with analyses able to provide the best to the majority.

The concordance about cause-and-effect relationships with lack of consensus about the desired 'ends' or outputs will lead to a decision strategy by compromise. In such a case political and bargaining forces will conduct the decision making process. Accounting systems will be used as 'ammunition machines' "by which and through which interested parties seek to promote their own particular position" (Burchell et al., 1980, p. 15). An acceptable structure to this case should be representative and proportional of all forces.

In the case of decision strategy by inspiration there is not consensus about cause-and-effect relationships and the same occurs in terms of objectives. An imminent rupture can be observed demanding that the process conductors look for a way to one of the two preceding strategies, by establishing common points between alternatives. An accounting system will serve as a 'rationalisation machine', where it can legitimate and justify actions (Burchell et al., 1980). There is no logical structure in this case because of the emergence of individual decision units, underpinned by opportunistic and charismatic leaders.

At the other extreme of analysis and not taking part of the preceding presented chains, there is a decision-making process understood as being subjectively rational, i.e. the 'garbage-can' model. It was detailed, in universities, by March and Olsen (1976). As posed by Hofstede (1981, p. 201)

> "in the 'garbage-can' process all issues that confront the organisation at a given time are put simultaneously into a 'garbage-can', which poses a limit to the amount of attention available. ... Choices are not only made by resolving problems but also by overlooking them or deliberately escaping from them. This process is non-rational".

The model is applied in 'organised anarchies' where no assumptions are made about the existence of hierarchical structures or generally accepted rules.

One can observe that the decision-making process can be interpreted as distributing itself for three distinct ramifications that affect equally planning and control within organizations and, consequently hospitals. The first one is normative or prescriptive, i.e. it shows how the decisions should be made. Using knowledge and, to some extent, precise activities the decision maker can change the situation and get the desired outputs.

The second is more descriptive, the decision making process should try to show how decisions effectively occur. It attempts to understand and describe the ways followed to reach the decisions and, therefore, establish methods to new decision-making processes. The third one, more socio-political, encompasses the two preceding ramifications and also, involve probable exceptions. It considers the use of rationality and systemic structures but it does ignore neither the human relationship nor the complexity of their minds.

5.2.2 Problem Solving

The problem solving process is considered integrated with decision-making (Emmanuel et al., 1993; Ashmos et al., 1998, 2000). Therefore, this research does not provide a distinction between both. This thesis discusses problem solving due to its presence in the definition of activities and outputs foreseen for the decision-making. The problem solving in this research will be explored based on the possible presence and sequence of phases involved in its solution or 'programmability'.

Table 5.4 – Phases/steps/procedures for problem solving

Brim et al. (1962)	Pounds (1969)	Kast and Rosenzweig (1979)	Simon (1976)	Bransford and Stein (1984)
Identify the problem	Choose a model	Sense the problem	Intelligence	Identify the problem
	Compare it to reality	Define the problem		Define the problem
	Identify differences			
	Select a difference			
Diagnose its causes	Consider operators			
Generate solutions		Generate solutions		
Evaluate solutions	Evaluate consequences of operators	Evaluate solutions	Design	Evaluate solutions
Choose solution	Select and operator	Choose a solution	Choice	Act
Implement	Execute	Plan implementation		
		Implement		

The problem solving literature, particularly organizational problem solving, is predominantly based on the phase theorem (Gerwin and Tuggle, 1978). In such a case the problem solver is supposed to know and follow steps in sequence to reach the stage of choice and, consequently, solve the problem (see Table 5.4). All comparisons between the phases proposed by different authors are limited because they each represent a particular approach. The literature is also poor in given empirical support to its descriptive and prescriptive validity (Lipshitz and Bar-Ilan, 1996).

The study of the phase theorem has been applied in diverse circumstances and occasions (see Table 5.5). Despite this fact, Lipshitz and Bar-Ilan (1996, p.48) posed that "considering the variety and ubiquity of phase models, it is surprising to find that the empirical evidence for their descriptive and prescriptive validity is very slim". Analytically with the decision-making processes, prescriptive means that the degree of success will increase if a sequence of phases is followed. Descriptive suggests that the problem solvers follow a certain group of phases.

Table 5.5 – Application of phase theorem

Author(s)	Problem-solving type	Level	Characteristic
Brim et al. (1962)	Real world	Individual	Descriptive
Polya (1957)	Mathematical	Individual	Descriptive
Kast and Rosensweig (1979)	Real world	Organisational	Descriptive
Bransford and Stein (1984)	Any	Any	Prescriptive
Newell and Simon (1972)	Real world	Individual	Prescriptive

Ashmos et al.(2000) posed that hospitals are fragmented places in which different worlds co-exist such as the physicians', the managers', and nurses' worlds and there is empirical evidence that these

> "worlds talk past each other and attempt to solve problems in isolation from each other. Each world concerns itself with its own problems, with no mechanism for solving systemic problems – those problems that spread across multiple worlds" (p.109).

Therefore, isolated problem solving does not solve systemic problems. The same can be said in terms of decision-making. In consequence the design of an accounting information system such as cost information is contingent on the several worlds. However, completeness and neutrality of such information are questionable in situations where non-programmed decisions occur. This conducts back to the point that within multidimensional organisational with information asymmetry encourage opportunistic behaviour by managers (Emmanuel et. al., 1993).

The reasons for the human choice are various and largely opportunistic (Newell and Simon, 1972; Lapsley, 1993). Within hospitals problem solving and decision- making have assumed a certain degree of synonym-ism and are employed as such. This fact does not present a dilemma to this research, because it is concerned with programmed and non-programmed decision-making what can be paralleled with phase and non-phase problem solving (see Figure 5.2).

5.3 Cost Information Framework

Literature (accountancy and economics based mainly) has shown the importance of cost information for planning and control within an organisation. However, in the same way, it is understood that it has not been explored fully in terms of the managers in hospitals, especially by the intermediate level managers, who are apart from strategic planning and are continuously struggling with inadequate or lack of information.

This section deals with the cost information literature. Firstly, "cost" is presented and discussed. Secondly two important cost approaches, from economics and accounting, are set out. Starting at this point, a third area is presented, i.e. costing techniques or methods of cost measurement. For example, the full cost of a patient's treatment can be compiled through bottom up or top down processes. The presentation of any specific technique will be avoided. Reasons are: there are technical problems and disparities in costing mechanisms in terms of hospitals as already discussed in this thesis, techniques differ between countries as well as final reports. When exploring techniques behind such variability Northcott and Llewellyn (2001) set out "the sources and significance of this variability are poorly understood" (p. 3). More importantly, costing mechanisms per se are not relevant to the objectives of this research.

5.3.1 Costs

Over recent years the growth of the global competitiveness has been such that companies are compelled to commit themselves to managerial excellence. As already posed, in the same way, the growing turbulence of the environment has been leading organisations to develop internal systems progressively more complex and refined (Ansoff and McDonnell, 1993;

Porter, 1990; Choo, 1995, Langabeer, 1998). In this context, the administration of costs becomes essential to companies. This approach has been acknowledged more and more as one of the bases of competitive advantage and of organisational productivity.

A parallel and similar situation has occurred in the public sector, particularly in the healthcare segment. As pointed out by McGuirre (1991)

> "a number of European countries, including Netherlands, Spain, Sweden, and the Great Britain, are reforming or considering reforming their health care sector with the aim of containing costs and, they hope, improving efficiency. Others, including the USA, are becoming increasingly concerned about the share of GDP devoted to health care." (p. 19).

This was reflected in the public sector (Hood, 1991). In the case of public hospitals, where the productivity and competitiveness factors demand other costing approaches, the administration of costs assumes a vital role "to provide the best to the most for the least" (Yates 1996, p.20).

Several cost definitions, to some extent, set out the study of resource acquisition or consumption in terms of input, process and output. It is not the objective of this thesis to discuss all possible variances in cost definitions, nonetheless it is important to identify and discuss the generation and support of cost information, as a product of accounting systems, for scientific rationalism and alternative approaches to be applied in the public sector in general and hospitals in particular (see Burchell et. al., 1980; Rodrigues, 1988).

The term cost can be defined in different ways and costing can also be done in different ways (see Geiger, 1999). As pointed out by Mellett et al., (1993, p. 97) "in the same way that there are many different types of costs, there are also many different costing methodologies and processes". Hence, costing measures the loss of monetary value of the acquisition or consumption and costs can therefore be expressed in three main ways:

- by reference to the input;
- by reference to the function;
- by reference to the output, or, more correctly, throughput.

It can be said that the cost definition is based on two main theories: Economics and Accounting. Even though, both theories have common points they can construct or analyse the cost behaviour in different ways. It means that economic theory and the accounting theory understand and explain different, but related, costs.

Economic theory defines cost in terms of the opportunities lost when a choice between alternatives takes place. It means that costs are considered benefits, in terms of outputs, lost and, in certain cases, benefits can be only costs avoided. Hence, costs are prospective and subjective under the economists' approach (see Figure 5.6). Thus, costs are seen from the perspective of a decision-maker and not a detached observer. It can be said that economists work with a cost estimation perspective.

Accounting theory gives emphasis to the resources consumed or acquired to define the term cost. As stated by Mellett et al. (1993, p.81), "costs are measures of loss of monetary value when a resource is acquired or consumed". One point highlighted by this definition is the 'loss of monetary value' rather than merely 'money spent' for private companies. The health system in Great Britain, unlike Brazil, has given considerable emphasis to the former rather than cash receipts and payments, so, as to provide a wider and more representative measure of a financial performance. This approach gives also, a special dimension to the term cost, i.e. emphasising planning rather than only control, at the same time that it opens doors for the alternative approaches to scientific rationalism.

Figure 5.6 – Costing approaches

Economics	Accounting
Prospective and Subjective	Retrospective and Objective

It can be assumed that accountants work with cost measurement. From their perspective, cost can be seen as retrospective and/or objective. The cost of performing a certain activity can have different but equally correct answers. The differences can be explained by the different types of cost value: purchase cost, historical cost, replacement cost and the different cost techniques: full cost, direct cost and others. The type of costing used is directly related with the decision the manager is trying to make (Emmanuel et al., 1993). This flexibility highlights the point that the usefulness of cost information should be based on the perception and attitudes of the manager rather than in technical mechanisms (Schweikart, 1986; Geiger, 1999).

One has to recognise that the work involving cost demands awareness of the basic concepts of health economics. The economic approach to costs of healthcare systems can be addressed

in terms of effectiveness, what goes beyond the contingent aspect. As put by Bowling (1997) "health economists aim to incorporate costs into the assessment of outcomes of health care because clinical effectiveness needs to be interpreted in relation to economic, or cost, effectiveness" (p. 88). Nonetheless, this approach should not be considered in this thesis because it is concerned with the use of cost information by hospitals intermediate level managers and not strategic level or policy analysts.

5.3.2 Accounting Approach - Cost Measurement

The two broad approaches to full cost measurement are top-down and bottom-up. The top-down process consists, basically, in taking the total amount of planned or actual cost and dividing it over associated output volumes. It can be done by allocation or by apportionment.

The top-down approach is far the most applied process of cost measurement. It presents certain advantages when compared with the bottom-up process:

- it is deemed much simpler, quicker and cheaper to apply;
- the cost and resultant prices of its application can be directly compared to the planned and the actual costs (Mellett et al., 1993).

However, Mellett et al. (1993, p. 174) claims that the top-down approach is widely used "primarily because of the lack of a viable alternative rather than its advantage of simplicity". It is recognised as being less accurate than the bottom-up costing and can also lead to problems with clinical and administrative managers, i.e., if they realise that resultant information bears no relation to their perception of the costs.

The top-down process has been criticised, despite its use and importance. As stated by Johnson and Kaplan (1987, p.1) "today's management accounting information, driven by the procedures and cycle of the organisation's financial reporting system, is too late, too aggregated, and too distorted to be relevant for manager's planning and control decisions." The traditional forms of costing, still often used, are not very appropriate to the internal management of the company processes (Morrow, 1992; Yates, 1996). Besides, these traditional forms of costing do not explore with the necessary managerial depth the identification of the cost components. In the case of hospitals, indirect costs are not isolated

clearly when using the top-down process. They form the major part of the total costs; however, they are difficult to attribute to health care 'products' in a meaningful way (Ellwood, 1996a). The traditional forms of costing lose much of their usefulness in the decision-making process (Morrow, 1992). Therefore, researchers are still seeking to understand and clarify problems relating to costing processes within British hospitals (see Ellwood, 1996b, 2000; Northcott and Llewellyn, 2001).

The bottom-up approach builds up the cost for each unit of activity. This 'standard cost' approach is prohibitive in countries with high inflation rates and a relatively unstable economy, which was the case of Brazil before 1994. The advantage of the bottom-up approach is the substantial reduction in the practice of apportionment ("pro rata") of costs, which hampers the adequate visualization of the process and the resources consumed. Nonetheless, in some cases, it is still necessary to make concessions concerning items that are impossible to be measured, because of the lack of pattern or technique. The two approaches are not mutually exclusive but it is important to assert that the approach of cost allocation based on the bottom-up model eliminates or minimises substantially the imprecision of cost information (see Mellett et al., 1993).

As shown before, the study of the use of cost information within hospitals is not new but few, if any, are related to middle management planning and control. Montacute performed his research involving costs and hospitals in Great Britain in 1962. The cost information, usually emitted in financial terms by accounting systems was restricted to accountants and other financial managers of the organisation. Brazil appears to be the same in this respect.

The use of cost information started to change when it became more than a mere financial exercise, for example, when case-mix management or case-mix accounting systems embraced medical elements and hence supported other processes (Bloomfield, 1991; Covaleski et al., 1993, Lowe and Doolin, 1999). The name given can vary but this most significant change is related with the use of DRG classifications or similar, already referred to in this thesis. In the healthcare sector, case-mix accounting systems, based on DRGs, have contributed to managerialism permeating throughout hospitals. Case-mix accounting based on DRGs could be used as a control mechanism by regulatory external bodies permitting the management of hospitals along various "product lines"; and, simultaneously, to balance power between administrators and physicians (Covaleski et al., 1993).

In Great Britain, a parallel movement took place, starting with management budgeting but, it was the Resource Management Initiative in the NHS that brought the involvement of information systems "to connect medical activity to resource usage, and thus cost" (Bloomfield, 1991, p. 701). In the Great Britain experience, it is reported the development of cost information oriented towards both areas: medicine and management. Bloomfield (1991) cited the case of Guy's and the Freeman hospital (p. 721). The former is management oriented and the latter clinically oriented. Despite this division, it can be said that cost information is able to support both areas of knowledge and both modes of governance.

Accounting systems based around DRG (USA, Canada, Australia, etc) or HRG (Great Britain) have been widely used to help control costs, pricing, and encourage planning (Young and Saltman, 1983; Smith and Mick, 1985; Bloomfield, 1991; Covaleski et al., 1993; Ellwood, 1996a, 1996b; Vaul, 1998; Lowe and Doolin, 1999; Lowe, 2001). The cost information generated in this way is able to provide an array of accounting and operational performance elements. The possibilities of such systems go through detailed historical reports of patients treated and costs of specific clinical specialities to derive the performance of individual clinicians (Bloomfield, 1991, Goncalves et al., 1998; Lowe and Doolin, 1999). Lowe and Doolin (1999) reinforce that "information may be produced at various level of aggregation, but the significant feature of these systems is their ability to provide information at a high level of detail. It is possible to track individual patient treatments throughout the hospital on a cost and activity basis" (p. 186). Thus alternatives are coherent in terms of activity, output, resource, policy and so on.

Going further, accountability and measures of production, given in medical terms, facilitate rigorous forms of budgetary control and, in functionalist terms, comparisons among departments and physicians. As posed by Lowe and Doolin (1999), "such prescriptions hold out the prospect of establishing and documenting a relationship between medical and administrative decisions" (p.186).

Case-mix accounting systems were not used for pricing during the internal market and it seemed that they did not fully develop in Great Britain (Ellwood, 2001). However, budgeting did evolve to clinical directorates and is strong today. Nevertheless, the reference cost

initiative, introduced at the end of the last decade, is case-mix based, influential and permits public scrutiny.

The budgeting process can be considered a rationalist form of planning (CIMA, 1989). This provides the elements and performance indicators to achieve objectives. Based on these elements, indicators supply a reasonable framework to answer 'what-if' questions, which can be considered a factor of uncertainty reduction (Bourn and Ezzamel, 1987).

Commonly, in the public sector, budgeting is incremental, which can reduce even more its application in face of complex rationality. This is an approach based on traditional rationalism and it still is arguably its application within hospitals. The nature of the hospital drives managers to complex situations involving opportunism, force and power, exerted internally and externally. These are incompatible, to some extent, with the managerialism imposed by the rationalistic approach.

The budgeting process is a practice common in the public sector, even though it is not unique to them. This explains what some authors such as Bourn and Ezzamel (1987, p. 29) posed:

> "budgets communicate information around organisation concerning targets, plans and constraints. They may offer a means of motivating managers to accept, and to strive to attain, performance targets which are consistent with the broad organisational purpose. They may provide a means of evaluating the performance of managers and organisational units against standards derived externally to the budgetary group".

Wildavsky (1986) suggests that budgets can be attempts to allocate financial resources through internal political processes to serve different human purposes. This asserts that budgets can represent, even though do not explain, political negotiation or fundamental individual views or group interests. Authors have defended that imposed theories and theories used in practice (pragmatic and non-traditional) are different and should be used in common. This would involve the 'double-loop learning' (Bourn and Ezzamel, 1987; Tsoukas, 1995).

In the healthcare service budgets have devolved from district-wide functional budgets to unit budgets and clinical directorate budgets. Initially, the general idea was the creation of devolved budgets to "monitor compliance with budgets limits by heads of function" (Ellwood, 1990, p. 25). According to this author, the practice has enabled greater

participation in the budget process, more realistic and responsive budget setting and improved control.

Thus, actual cost information can be considered as being the integration of medical practices and consumption of resources. Such integration makes available the management of clinical activity based on the span of patient categories (such as diagnosis, age and treatment) and the associated differential resource allocation, which favours benchmarking and efficiency gains.

5.3.3 Cost Information for Planning and Control

The phrase information use appears to be straightforward and warrant no clarification, however because of its importance to this thesis its meaning should be outlined. The study of information uses or needs is cross disciplinary (see Rodrigues, 1988). It involves areas such as cognitive psychology, communication studies, diffusion of innovations, economics, information retrieval, organisation theory, and social anthropology. While cost information often has a physical manifestation, e.g. a Budget, the context and meaning of the information are created and re-created each time it is taken up by the user.

The number of research studies on information use is significant. One can encounter several forms: in terms of organizations (see, for example, Cyert and March, 1963; Argyris and Schön, 1978; Weick, 1979; Sackmann, 1991; Simon, 1991; Huber, 1991); or organizational areas such as finance and accounting (see, for example, Buzby, 1974; Chandra, 1974; Biggs, 1984; Mear and Firth, 1990; Covaleski et al., 1993; Previts et al., 1994) and marketing (see, for example, Deshpande, 1982; Deshpande and Zaltman, 1982, 1984; Hu, 1986; Moorman et al., 1992); or also individuals use of cost information (see, for example, Bandura, 1986; Schweikart, 1986; Gist, 1987; Gist and Mitchell, 1992; Kim, 1988).

Information use, as one concept, has been difficult to define properly. In this research it is necessary to regard information use pragmatically as the individual, the middle manager, making a choice or selection of "to attend to" or "to act on". This choice is based on the individual, the middle manager, perceiving some meaningful relation between the message content and the decision to be made, planning or control to be performed (Taylor, 1985; Choo, 1995, 1996). Choo (1995) set out that "information seeking and use is driven by information needs and managers in turn create new information needs" (p. 56). This author

suggests that information use typically can involve the selection and processing of information in order to answer a question, solve a problem, make a decision, negotiate a position, or understand a situation. Further, Choo (1995) posed that "problem situation refers to those dimensions of the internal and external environment such as organizational norms and external uncertainty that determines the use and usefulness of information" (p. 56f). This view will be espoused by this research as adequate for the study of planning and control.

Whether information is selected to be processed or not, depends largely on its perceived relevance by the manager. The information brings characteristics posed as being related to the source such as reliability, clarity, simplicity to consult, easily to understand, quantity or volume and therefore they are considered intrinsic (Taylor, 1985; Davenport; 1998, Kim, 1988). Relevance is the single characteristic related to the user and it is said to be extrinsic (Schweikart, 1986). Saracevic (1970) and Choo (1995) agreed that relevance is a measure of effective contact between the source and the receptor in a communication net.

Henderson (1997) and Emmanuel et al. (1993) agree that the most visible use of accounting information is budgetary planning and control. This thesis is not directly interested in budgetary planning and control but, by the use of cost information that can be brought by budget statements.

Monthly costing spreadsheet, a case-mix exercise, and budget statements are also available for managers of certain Brazilian public hospitals. There is a sort of national reference cost information: the SUS's Table. Any comparison between the Brazilian SUS's Table and the British NRC must be cautiously observed. Among many reasons, the SUS's Table, to some extent, is an internal product of the Brazilian Ministry of Health based on availability of money and on the power of lobby groups, e.g. cardiologists are very well paid for their services. In opposition, as discussed in Chapter 2, the NRC is based on cost information generated within the British hospitals and the NHS Executive compiles the information and provides an annual report classifying Trusts based on their performance. In terms of objectives, as previously discussed in Chapter 3, the SUS's Table guides the DRG-like fee reimbursement for hospital services provided. In turn, the NRC (as discussed before in terms of the NRCE) can be used for comparison and to inform, for example, variations in performance. It seems that in the future the NRC will provide information to fund NHS Trusts.

Some Brazilian hospitals, mainly public hospitals in Minas Gerais State, are developing common cost information system similarly to the NRC initiative. They use a bottom-up accounting approach and DRG-like to generate their own costs and divulge them to other public hospitals (Goncalves et al., 1998). It is an exercise started in 1996 and it lays on the good will of hospital managers not being part of any governmental initiative. It is also available in Brazilian hospitals theatre, laboratory, radiology, and pharmacy costs. These are still too imprecise because of absence of reliable documentation and information technology among other reasons (Rodrigues, 1988).

Table 5.6 shows cost information currently available for British and Brazilian hospital managers. There is also, other resource information related, but uncosted, such as pharmacy issues.

Table 5.6 - Information available for hospital managers

Country	Cost Information	Resource information
Great Britain	. Case-mix costing system . Budget statements - with patient activity data . Budget statements . HRG (reference) costs . HRG prospective cost/price . Staff costs . Drug costs . Laboratory costing system . Radiology cost . Theatre cost	. Case-mix systems . Nursing dependency . Pharmacy issues . Theatre usage . Pathology relative value system . Radiology relative value system
Brazil	. Monthly costing spreadsheet – case-mix (Planilhas de custo mensal) . Budgeting directives – monthly (Diretrizes orcamentarias – mensal) . Budgeting directives – annual (Diretrizes orcamentarias – annual) . Drug costs (Custo de medicamentos) . Staff cost (Custo de pessoal) . Laboratory cost (Custo laboratorial) . Radiology cost (Custo radilogico) . Theatre cost (Custo de centros cirurgicos)	. Pharmacy supplies level (Nivel de estoques da farmacia) . Storeroom supplies level (Nivel de estoques do almoxarifado) . Quantity of pathological exams (Quantidade de exames patologicos) . Quantity of radiological exams (Quantidade de exames radiologicos)

Note: Resource information is uncosted.

This thesis is interested on the use of cost information perceived relevance by hospital middle managers in planning and control. As posed by Mintzberg (1975, p. 168):

> "the three sets of ten managerial roles meld into a portrait of a manager as an 'information processing system': in essence, the manager is an input-output system in which authority and status give rise to interpersonal relationships that lead to inputs (information), and these in turn lead to outputs (information and decisions). One cannot arbitrarily remove one role and expect the rest to remain intact".

As one can see any attempt at isolating a specific kind of cost information should be seen as artificial. The manager process masses of information and he does it according to his needs and situation.

There is also a substantive body of literature about cost and costing techniques and the critical relevance for such information within organisations produced in recent years in Great Britain. The bulk of the literature has focused on the acquisition and methods used to generate cost information (Bourn and Ezzamel, 1986; Ellwood, 1996a, 1996b, 2000; Northcott and Llewellyn, 2001). Research has been done in terms of studying the techniques applied for cost information and variations in unit cost for HRGs (Northcott and Llewellyn, 2001). The British Government has insisted on the production of cost information. Studies about cost and cost techniques in Brazil have just started due to the control of inflation.

The reason for applying an accounting system, and hence cost information, as a channel to study planning, control and decision-making in public hospitals' middle management is partly, due to its characteristic of supporting scientific rationalism and alternative approaches. Moreover, it can be involved with meaning, moral and power, thus embracing the necessary elements present in contingency theory (Emmanuel et al., 1993). The hierarchical, functional and divisional elements of the organisation are mirrored by the accounting system. One can also see accounting as a language used undoubtedly to communicate the cost information within the organisation. Roberts and Scapens (1985, p. 448) put that

> "as a language, accounting provides organisational members with a set of categories, or 'systems of relevance' in terms of which they can make sense of what has happened, anticipate the future, and plan and assess action".

Certainly, the costing system is one of them. Accounting provides that information, but, the 'structure' of meaning and managerial use is not set out, giving space for different interpretation, elaboration, negotiation, and dispute – absolutely normal within an organisational arena. In this case, a production and reproduction of meaning is expected.

Relatively to this research, there are two points to emphasise. Firstly, it is true that accounting information is recognised as being able to convince clinicians to perform tasks – so, influencing their behaviour. Secondly, the discussion cannot be related only to the hierarchical structure without considering the different modes of governance found within

hospitals (Lapsley, 1993, 1997). In these organisations planning and control are even more intricate.

Chapter summary

The content of Chapter 4 and Chapter 5 forms the backbone to the development of the research design and instruments content and application, which is going to be presented in the next chapter. Planning was presented and discussed in terms of the presence of rationality and complex rationality, which supports the managerial planning dimension or construct used in this thesis. These strategies were studied emphasizing two approaches. One of them consisted of the activities ('means') and outputs ('ends') relationships. The other one involved the observation of objectives or goals and predictive models when planning. The first approach consisted in developing a close line with the decision-making and problem solving frameworks. Planning was also discussed in terms of generative learning and adaptive learning and the presence of both being important to environmental adaptation in contingency terms.

Control was presented in terms of rationalism and complex rationality as well, which supports the managerial control dimension or construct used in this thesis. Control was discussed relatively to the presence and characteristics of goals and predictive models as being fundamental to characterise the models involved, cybernetic or non-cybernetic. Control was also characterised according to the possible types, i.e. routine, expert, trial-and-error, intuitive, judgemental and political.

The decision-making framework was presented in two major lines: the normative or prescriptive and the descriptive approaches, i.e. how decisions should be made and how decisions effectively occur respectively. A third line was presented as an attempt to encompass the preceding ones and possible exceptions. Problem solving was discussed in terms of being of phase or non-phase solution seeking to build up a parallel with programmed and non-programmed decision-making. Analytically, problem solving can also be prescriptive and descriptive akin to decision-making, i.e. a complete sequence of steps is discussed as being the adequate way to reach a solution or the solution is obtained through just certain steps or phases.

According to accounting theory, cost information is detached i.e. cost is objective and can be clearly isolated. The accounting theory approaches cost measurement using two possible techniques: top-down and bottom-up processes of cost generation. Case-mix accounting has a chequered history in Britain: initially seen as necessary for the internal market but never fully developed or used in that setting, and now used for benchmarking through the National Reference Cost Exercise. Budgetary control has been extended and has supported the decentralization process within British hospitals.

Finally the chapter examined cost information for planning and control by public hospitals' middle managers. The cost information system was emphasised as a supporting tool for rationality and complex rationality for decision-making in planning and control.

Chapter 6 - Research methodology

The preceding chapters have dealt with the conduct of this research under the umbrella of contingency theory and modes of governance theories. These frameworks can be put together to examine and understand the middle management mediation role when exercising planning and control processes within hospitals. In addition, both theories recognise that the external environment influences the organisational design and the design of accounting information systems. Finally, both are positive theories that recognise the decision-maker as being self-interested when planning or controlling. These assumptions have driven the development of the proposed methodology.

This work pursues many research investigations already done utilising the model posed by Churchill (1995), which is shown in Figure 6.1.

Figure 6.1 – Developing research

1	Formulate Problem
2	***Determine research design*** Sources of information, Hypotheses formulation, Research strategy
3	***Design data collection method and forms*** Observational or questionnaire data collection? Structured or unstructured form?
4	***Design sample and collect data*** Specify the sample frame, selection process and size. Data collection method.
5	Analyse and interpret the data Editing, coding and tabulating of responses. Analysis of the data.
6	Prepare the research report Clear, accurate and concise. The standard by which the research is judged

Source: adapted from Churchill, 1995.

While the process presents specific and discrete steps, in practice it is not always the case (Luck and Rubin, 1987). Repeated interactions between steps are necessary.

This chapter sets out the methodology employed to carry out the study of the phenomenon proposed in this thesis, i.e. steps 2, 3 and 4. Step 1 has already been introduced in Chapter 1. Step 5 onwards will be presented in subsequent chapters.

Before setting out the research design a brief discussion of epistemological and technical use of quantitative and qualitative methods is provided. This exposition gives the philosophical support to the particular strategy and techniques chosen for this research.

6.1 Epistemological and technical bases

Bryman (1998) sets out that structuralism, post-structuralism or a combination of both approaches provide the necessary basis to study a social phenomenon, which includes the managers' use of cost information interrelated with planning and control within public hospitals. This research draws on both approaches; however, it is more strongly influenced by the positivism and structuralism perspective. Firstly, because the organisation, public hospital in this thesis, is an entity to which is given boundaries through the accounting system, it has a rationalist stance (Roberts and Scapens, 1985). Secondly, it is due to the literature emphasis in the belief in progress and reason and that the human agent is the centre of rational control and understanding. Also, reason and understanding are, to some extent, the starting point and central to decision-making and problem solving, planning and control processes as already discussed in the preceding chapter. Finally, our reactions are to a very large extent structured by our social environment.

Table 6.1 - Research strategies – methodological approach

Structuralism	Post-Structuralism (or not-structuralism)
- Survey Methods and Questionnaires: "Quantifying their data into statistical tables to produce analyses involving a heavy reliance on mathematics" (Cuff, 1979, p.18).	- Symbolic Interactionism Interviews and Direct Observation: "Members of society are seen as active agents who construct their social action on basis of the meanings and interpretations they give to their environment. They do not simply transmit or reflect a given structure, but in fact create it by interaction" (Cuff, 1979, p. 16).

Source: adapted from Cuff, 1979.

However, one has to admit new perspectives imposed by the fact that the organisation, as a result of the environment or actors' transactions, has not only a rational expression. It is a system that can have a 'life' of its own and a collectivist approach, also discussed in the preceding Chapter 4. There are simulations of simulations and interpretations of interpretations (Delanty, 1997; Potter, 1999). Researchers concerned only with structures tend to ignore the importance of individual cognition, communication, feelings and so on. In the same way, purposeful or opportunistic action can influence perceptions of social structure (of relations) within an organisation, and these changed perceptions can, in turn, influence action. Therefore, social interrelation and integration, bounded rationality and opportunism, as discussed in the institutional theory has proved that the approach based on structuralism should be enriched using, to some extent,

techniques from post-structuralism. Giddens (1976, 1979, 1981), as discussed earlier (see Chapter 4), was interested in both ways, i.e. individuals influence social phenomenon and simultaneously are influenced by it. This reinforces the proposed research approach. Thus, the strategy of this research was compiled using the cells of Table 6.1.

6.2 Phase 1 – quantitative

6.2.1 Preliminary approach in Great Britain and Brazil

This research involved an initial stage in both countries. Due to the characteristics of this cross-national study and diversity of both countries it was considered that focus groups and preliminary test surveys in Brazil and Great Britain would be adequate for this introductory approach. This approach is set out more fully in Appendix J.

Firstly, this stage sought to refine the research question and get ideas about working questions and hypotheses. Secondly, due to the scarcity of prior studies, it provided early insights for a first version of the questionnaire and for an initial group of questions for interview. Thirdly, participants gave suggestions in terms of gaining access strategies. It also sought to provide certain elements, such as the clarification of managerial dimensions and constructs and the way they should appropriately be measured. At the same time it gave information about the practical possibilities of researching specific, conjectural statements.

6.2.2 Research problem

The research problem and working questions of this research have been introduced in Chapter 1 of this thesis. They are now recapitulated in this chapter.

To carry out an investigation one can do certain presuppositions, or propositions that do not correspond to an assertion, about the solution or problem situation. A presupposition is done just to test its consequence. Those presuppositions are done aiming to develop a basis to sustain the research question (Kaplan, 1964; Churchill, 1995).

At the same time that the presuppositions were particular to the researcher, they received contributions and became richer from the beliefs of lecturers and observers, who are interested in the subject of this work or have a general interest in the research, and also, from the preliminary

research (Kaplan, 1964, Churchill, 1995). They were shared, presented and discussed on several opportunities, with other academics and professionals.

Hence, a group of valid questions was developed after considering all presuppositions. Some specific questions involving human resources, supplies and consumables, and equipment were involved seeking to understand the depth of environmental influences on hospital planning and control. Some of these presuppositions are listed in Appendix A.

This procedure led to a question that can be considered a general inquiry:
Do the administrative managers of the intermediate level, irrespective of the structure, of the public hospitals in Great Britain perceive cost information as useful for decision-making, planning and control processes as their counterparts in Brazil?

The general inquiry was then refined for the following research problem:
Do intermediate level hospital managers in Great Britain use cost information more effectively for planning and control than their counterparts in the hospitals of Brazil?

As stated before, the concept of effective use of cost information in this thesis is aligned with the idea defended by Emmanuel et al. (1993), i.e. maintaining decision makers' commitment to the feasible region of intersecting, and acceptable sets of actions. This is due to the fact that this research is examining middle managers' mediation role in terms of planning and control. Therefore, the purpose of this work does not only involve hospital objectives, but also intend to be in line with the complex rationality related to the achievement of other objectives in the decision-making process as well (for example, personal, subjective or of the clan or the hierarchy).

Considering both countries, the general question was distilled into eight working and illustrative questions prior to the construction of the research instruments. These questions embrace the subject of this thesis.

This study is interested in the use of cost information in planning, control and decision-making as managerial dimensions in the intermediate level of public hospitals. Thus:

1. What is the general profile of the public hospital managers? What can be said about their experience, sector and time in charge? (Discussed in Chapter 7.2.1)

As discussed in preceding chapters the environment is responsible for actions more or less intended within organizations. Also, as it is well known, these managerial functions cannot be perfectly dissociated in the daily managerial performance or be posed as perfectly disaggregated actions (see, for example, Emmanuel et al, 1993; Anthony, 1965). They complement each other. However, they can be defined as being different activities or functions and the result of attitudes arising from management role, opportunism and bounded rationality (see, for example, Thompson et al., 1991; Lapsley, 1993). Due to these characteristics they were put together and interrelated. Planning and control are studied in the research instrument mainly in terms of the predictive model and goals (see, for example, Dant and Francis, 1998;) and 'means' and 'ends' relationships (see, for example, Banfield, 1973; Hopwood, 1987) and activities and outputs (see, for example Emannuel et al., 1993). It also involves aspects of cybernetic and non-cybernetic approaches (see, for example, Hofstede, 1981; Macintosh, 1994).

Decision-making and problem solving are a central concern of the study, in particular, focussing on programmed and non-programmed decisions dichotomy (see, for example Simon, 1976). Research has suggested that programmed and non-programmed decisions can be seen as the two extremes of the same continuum. In addition, problem solving is also divided into two classes of problem that can be solved in terms of phase and non-phase theorems (see, for example, Lipshitz and Bar-Ilan, 1996). The point considered in this research is not the difference between decision-making and problem solving. The researcher is interested in understanding the use of cost information for decision-making and problem solving concerning planning and control, this also involves rationality and complex rationality, 'means' and 'ends', goals, prescriptive and descriptive processes (see, for example, Mintzberg, 1975; Thompson and Tuden, 1959; Burchell et al, 1980; Emmanuel et al., 1993; Ellwood, 1990, 2000). Both, decision-making and problem solving, can obey different rules (sometimes, dependent ones). Therefore:

2. How do they consider their decisional roles? What can be said about their goal congruence when performing planning and control processes? (Discussed in Chapter 7.2.2)
3. Do they consider the available cost information relevant? To what extent? How accessible is it? (Discussed in Chapter 7.2.3)
4. Are they effectively involved in decision-making and problem solving, in terms of non-programmed decisions and problems? What is the hierarchical influence on the non-programmed decision-making? (Discussed in Chapter 7.2.4)
5. Do they use cost information when planning and controlling in terms of human resources, supplies and equipment? To what extent? Do they consider cost information useful for

benchmarking and improving organizational functions? Is there complex rationality identifiable? (Discussed in Chapter 7.2.5)

6. Do they plan effectively? To what extent do they do it? Do they use different predictive models? Do they consider cost information useful to support the planning process? (Discussed in Chapter 7.2.6)
7. Do they control effectively? Do they consider cost information useful to support the control process? How do they consider control mechanisms and forms of control? (Discussed in Chapter 7.2.7)
8. Do managers perform planning and control differently? Do clinician managers and administrative managers perform planning and control differently? (Discussed in Chapter 7.3)

There is also the intention to identify certain items, factors, and forms of measurement, that surround the perceived usefulness of the application of the cost information (system) in planning and control processes. This involves the comprehension of the middle management mediation role of the possible environmental influence.

6.2.3 Hypotheses

Seeking both to discuss the working questions and test the hypotheses, the questionnaire was developed to get information about perceptions, opinions, behaviour, and beliefs of hospitals middle managers. Thus, to reach the objectives of this research, the items or variables explored in the questionnaire were classified into seven grouped factors and relevant managerial dimensions/constructs: 1 – Hospital structure relation specific factors; 2 – Organizational, managerial factors; 3 – Cost information specific factors; 4 – Decision making, problem solving; 5 – Cost information perceived usefulness and attitudes; 6 – Managerial planning; and, 7 – Managerial control. The researcher has decided to group some characteristics into dimensions/constructs to support future analysis. Items were comprised of attitudes rather than facts because a cognitive motivation was assumed (see, Schweikart, 1986). Responses to items or questions relating to an overall variable were averaged to derive an overall score for that variable (see Mak, 1989).

An outline of the questionnaire is obtainable from Table 6.2 and more details are presented in Appendix B.

6.2.3.1 Hypotheses presentation

According to Kerlinger (1979, p. 41)

> "there are two kinds of definitions: constitutive and operational. A constitutive definition defines words with other words. ... An operational definition is a bridge from concepts to observations. An operational definition assigns meaning to a construct or variable by specifying the activities or 'operations' necessary to measure it or to manipulate it. An operational definition, alternatively, specifies the activities of the researcher in measuring a variable or in manipulating it."

Table 6.2 provides the basis of the constitutive and operational definitions. Operational definitions are presented with the hypotheses in terms of the questions involved in their measurement.

Hypotheses are considered assumptions or refined inferences that the researcher makes about the characteristics of the population to be sampled (Kaplan, 1964, Dillon et al., 1987) declaring explicit preconceptions about the way the phenomenon to be sampled works (Lehmann et al., 1998).

The use of hypotheses has clear implications. First, hypotheses under test must be statements of the relationship between variables or concepts and second, formulated hypotheses must be testable. The researcher should devise a research approach that will gather information that can test each of the hypotheses. Stagg (1999, p. 116) set out that "in some cases of exploratory research there may be insufficient information for developing hypotheses" or causality. This research is not developing any deep causality form due to its exploratory characteristic.

Table 6.2 – Questionnaire outline, conceptual sources and operational definitions

Origin **Dimension or Construct** (Discussion)	**Basic Reference Sources**	**Reference sections**	**Questions of the questionnaire/ Operational definition**
Chapter 1, Question 1 **Hospital Structure relation specific factors** (Chapter 7.2.1)	Anthony, 1965; Katzner, 1999; Preliminary survey in Great Britain; Focus groups and preliminary survey in Brazil.	2.3; 3.3; 4.1; 4.2.1; 5.3.2	(Q1); (Q2); (Q3); (Q4); (Q5); (Q35a); (Q35b)
Chapter 1, Question 2 **Organizational, Managerial factors** (Chapter 7.2.2)	Mintzberg, 1975; Lapsley, 1993; Powell, 1990; Thompson et al., 1991; Ouchi, 1977, 1979; Simon, 1976; Emmanuel et al., 1993; Thompson and Tuden, 1959; Burchell et al., 1980.	2.1; 3.1; 4.1; 4.2.1; 5.1; 5.2.1.2	(Q8a); (Q8b); (Q8c); (Q8d); (Q32a); (Q32b); (Q32c); (Q32d); (Q32e); (Q32f); (Q33a); (Q33b); (Q33c); (Q33d); (Q33e)

Table 6.2 – Questionnaire outline, conceptual sources and operational definitions

Origin **Dimension or Construct** (Discussion)	**Basic Reference Sources**	**Reference sections**	**Questions of the questionnaire/ Operational definition**
Chapter 1, Question 3 **Cost Information specific factors** (Chapter 7.2.3)	Saracevic, 1970; Taylor, 1985; Davemport, 1998; Choo, 1996; Kim, 1988; Geiger, 1999; Schweikart, 1986.	5.1; 5.3.1; 5.3.3	(Q9); (Q10a); (Q10b); (Q10c); (Q10d); (Q11); (Q12a); (Q12b); (Q12c); (Q12d); (Q12e); (Q12f); (Q12g)
Chapter 1, Question 4 **Decision making, problem solving** (Chapter 7.2.4)	Simon, 1976, 1991; Mintzberg, 1975; Tsoukas, 1995; Ashmos et al., 1996, 1998, 2000; Katzner, 1999; Lindblom, 1973; Etzioni, 1973; Thompson and Tuden, 1959; Ellwood, 2000; Lipshitz and Bar-Ilan, 1996; Burchell et. al., 1980; Rodrigues, 1984; Roberts and Scapens, 1985; Covaleski et al., 1993; Mak, 1989.	2.2; 3.2; 4.1; 4.2.1; 5.2.1; 5.2.2; 5.3.3	(Q21a); (Q21b); (Q21c); (Q21d); (Q21e); (Q22); (Q24a); (Q24b); (Q24c); (Q30a); (Q30b); (Q30c)
Chapter 1, Question 5 **Cost information perceived usefulness and attitudes** (Chapter 7.2.5)	Test Survey in Great Britain; Test Survey and Focus Groups in Brazil; Simon, 1976; Katzner, 1999; Emmanuel et. al., 1993; Ouchi, 1977, 1979; Mellet et al., 1993; Ellwood, 1990, 1996a, 1996b, 2000; Burchell et. al., 1980; Bowling, 1997; Bloomfield, 1991; Choo, 1996; Roberts and Scapens, 1985; Kim, 1988; Covaleski et al., 1993; Mak, 1989.	2.3; 3.3; 4.1; 4.2.1; 5.1.1; 5.1.2; 5.2; 5.3	(Q13); (Q14a); (Q14b); (Q14c); (Q14d); (Q15a); (Q15b); (Q15c); (Q15d); (Q15e); (Q16a); (Q16b); (Q16c); (Q17a); (Q17b); (Q17c); (Q18); (Q19); (Q20); (Q23a); (Q23b); (Q23c); (Q29a); (Q29b); (Q29c); (Q34a); (Q34b); (Q34c); (Q34d); (Q34e); (Q34f); (Q34g)
Chapter 1, Question 6 **Managerial Planning** (Chapter 7.2.6)	Anthony, 1965; Kim, 1988; Mak, 1989; Lapsley, 1993; Powell, 1990; Osborne, 1997; Ashmos et al., 1998; Mintzberg, 1975; Dant and Francis, 1998; Covaleski et al., 1993; Emmanuel et. al., 1993; Tsoukas, 1995; Otley, 1980, 1994; Hoque and Hopper, 1994; Ouchi, 1977, 1979; Emmanuel et al., 1993.	2.2; 3.2; 4.1; 4.2.1; 5.1.1; 5.3.2; 5.3.3	(Q6a); (Q7a); (Q28); (Q29a); (Q29b); (Q29c); (Q30a); (Q30b); (Q30c); (Q31a); (Q31b); (Q31c); (Q31d); (Q31e); (Q33a); (Q33b); (Q33c); (Q33d); (Q33e)
Chapter 1, Question 7 **Managerial Control** (Chapter 7.2.7)	Kim, 1988; Mak, 1989; Lapsley, 1993; Powell, 1990; Osborne, 1997; Ashmos et al., 1998; Anthony, 1965; Tsoukas, 1995; Otley, 1980, 1994; Kloot, 1997; Hoque and Hopper, 1994; Marginson, 1999; Thompson and Tuden, 1959; Hofstede, 1981; Ouchi, 1977, 1979; Emmanuel et. al., 1993; Burchell et. al., 1980; Covaleski et al., 1993, Macintosh, 1994.	2.2; 3.2; 4.1; 4.2.1; 5.1.2; 5.3.2; 5.3.3	(Q6b); (Q7b); (Q23a); (Q23b); (Q23c); (Q24a); (Q24b); (Q24c); (Q25a); (Q25b); (Q25c); (Q26a); (Q26b); (Q26c); (Q26d); (Q27a); (Q27b); (Q27c); (Q33a); (Q33b); (Q33c); (Q33d); (Q33e)

Note: Question 8 involves all the dimensions or constructs presented (discussed in Chapter 7.3).

Secondly, it is important to note that a "hypothesis may be rejected but can never be accepted, except tentatively, because further evidence may prove it wrong" (Churchill, 1995, p. 822). This means that the hypothesis can or cannot be rejected based on statistical evidence. When the hypothesis is not rejected it is supported by the data.

Due to the nature of this comparative research in hospitals management and the fact that empirical research in Brazilian health system is still in its infancy, hypotheses to be tested have been derived from several sources. They have evolved from the literature highlighted in chapters 2 and 3 and past research carried out by the researcher involved in this project. Hypotheses can also be developed from anecdotal literature from managers and journals or from the presuppositions already discussed. This is acceptable (see Stagg, 1999, p. 117).

As presented below, the working hypotheses were divided into two groups: Hypotheses related to Great Britain, Hypotheses related to Great Britain and Brazil. The hypotheses are introduced in this section and fully discussed in Chapter 8.

6.2.3.2 Hypotheses related to Great Britain

1. The clinicians' involvement in planning and control and the use of cost information in planning and control

H1: Clinicians involvement in planning and control, when using cost information, improves clinical development. (Q34 and Q32a, Q34 and Q32c)

2. The observation of goals and the use of cost information in planning and control

H2a: The more 'individuals pursue similar goals', the more the applicability of cost information in control and planning within hospitals. (Q33a and Q34)

H2b: The more 'clinicians pursue similar goals', the more the applicability of cost information in control and planning within hospitals. (Q33b and Q34)

H2c: The more 'administrators pursue similar goals', the more the applicability of cost information in control and planning within hospitals. (Q33c and Q34)

H2d: The more 'clinicians and administrators pursue similar goals', the more the applicability of cost information in control and planning within hospitals. (Q33d and Q34)

H2e: The more 'the hospital's goals are known and observed', the more the applicability of cost information in control and planning within hospitals. (Q33e and Q34)

3. Influential forces and the applicability of cost information in planning and control

H3a: The 'manager's background' is likely to be positively related with the applicability of cost information in control and planning within hospitals. (Q31a and Q34)

H3b: The 'organisational objective' is likely to be positively related with the applicability of cost information in control and planning within hospitals. (Q31b and Q34)

H3c: The 'public objectives' are likely to be positively related with the applicability of cost information in control and planning within hospitals. (Q31c and Q34)

H3d: The 'organisational objective' is likely to be positively related with the applicability of cost information in control and planning within hospitals. (Q31d and Q34)

6.2.3.3 Hypotheses related to Great Britain and Brazil

4. Time spent with planning and control and assessment of this time

H4: The more the time spent with managerial planning, the more the judgement of this time as being adequate. (Q6a and Q7a)

H5: The more the time spent with managerial control, the more the judgement of this time as being adequate. (Q6b and Q7b)

5. Correlation between application of phase theorem[1] in planning and control

H6a: The more the application of phase theorem when planning, the more the application of phase theorem when controlling. (Q24 and Q30)

H6b: The application of phase theorem in decision making/problem solving for managerial planning of supplies/consumables is likely to be positively related to the application of phase theorem for managerial control of supplies/consumables. (Q24a and Q30a)

6. Process elements and forms of control

a. Material used (supplies/consumables)

H7: The revision of the characteristics of the material used is likely to be positively related to process control, in the case of control problems. (Q26a and Q25c)

H7a: The revision of the characteristics of the material used is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26a and Q25b)

b. Professional involved (human resources)

H8: The revision of the characteristics of the professionals involved is likely to be positively related to process control, in the case of control problems. (Q26b and Q25c)

H8a: the revision of the characteristics of the professionals involved is likely to be positively related to control trough changing the predictive model, in the case of control problems. (Q26b and Q25b)

c. Equipment

H9: The revision of the characteristics of the equipment employed is likely to be positively related to process control, in the case of control problems. (Q26c and Q25c)

H9a: The revision of the characteristics of the equipment employed is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26c and Q25b)

d. Activities performed (process)

H10: The revision of the characteristics of the activity is likely to be positively related to process control, in the case of control problems. (Q26d and Q25c)

H10a: The revision of the characteristics of the activity is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26d and Q25b)

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[1] Phase theorem means that all steps involved in the problems solving process as well as the sequence of these steps are known. It would correspond to the routine decision-making process, see sections 5.2 and 5.2.2.

7. Cost information usefulness for planning and control and support to decision-making

H11a: The usefulness of the cost information for control of resource consumption is likely to be positively related to its ability to facilitate an adequate decision. (Q16a and Q15a)

H11b: The usefulness of the cost information for control of clinical activity is likely to be positively related to its ability to facilitate an adequate decision. (Q16b and Q15a)

H11c: The usefulness of cost information in control and planning providing cost reduction is likely to be positively related to its ability to facilitate an adequate decision. (Q34e and Q15a)

H11d: The importance of cost information as an element for managerial control of supplies/consumables is likely to be positively related to its ability to facilitate an adequate decision. (Q23a and Q15a)

H11e: The importance of cost information as an element for managerial control of equipment is likely to be positively related to its ability to facilitate an adequate decision. (Q23c and Q15a)

8. Cost information usefulness and benchmarking of activities

H11f: The usefulness of cost information for control of clinical activity is likely to be positively related to benchmarking of clinical activities. (Q16b and 34a)

H11g: The usefulness of the cost information for control of administrative activity is likely to be positively related to its usefulness for benchmarking administrative activity. (Q16c and Q17c)

9. Cost information usefulness for cost reduction and its effective use as an element of managerial control

H12a: The usefulness of cost information in control and planning for cost reduction is likely to be positively related to its use as an element for managerial control of supplies/consumables. (Q34e and Q23a)

H12b: The usefulness of cost information in control and planning for cost reduction is likely to be positively related to its use as an element for managerial control of human resources. (Q34e and Q23b)

H12c: The usefulness of cost information in control and planning for cost reduction is likely to be positively related to its use as an element for managerial control of equipment. (Q34e and Q23c)

10. The rational use of cost information and environmental uncertainty and prediction

13a: The reduction of resource consumption, when using cost information in control and planning, is likely to be positively related to uncertainty reduction provided by the cost information. (Q15e and Q34d)

13b: Cost reduction, when using cost information in control and planning, is likely to be positively related to the uncertainty reduction provided by the cost information. (Q15e and Q34e)

13c: The usefulness of cost information for managerial control of administrative activity is likely to be positively related to its usefulness for prediction. (Q16c and Q14b)

11. The planning and control responsibility and the use of different predictive models when planning and adoption of mechanisms of control

H14a: The more planning is an administrators' task in the hospital, the more the use of different predictive models when planning. (Q28 e Q32b)

H14b: The more control is an administrators' task in the hospital, the more the managerial control of (consumed) material by cause. (Q25a e Q32d)

H14c: The more control is an administrators' task in the hospital, the more the managerial control of (consumed) material by process. (Q25c e Q32d)

12. The use of different predictive models when planning and controlling

H15a: The more the use of different predictive models when planning, the more the managerial control of (consumed) material by cause. (Q25a and Q28)

H15b: The more the use of different predictive models when planning, the more the managerial control of (consumed) material by process. (Q25c and Q28)

13. Centralisation and use of cost information for control administrative activity

H16: The usefulness of cost information for control of administrative activity is likely to be positively related to centralisation. (Q16c e Q21b)

6.2.4 Methodological design and research phases

According to Churchill (1995), "if relatively little is known about the phenomenon to be investigated, exploratory research will be warranted" (p. 80). All assertions like this are arguable. One can always point out some publications addressing, at least, parts of the phenomenon. But certainly, it is defensible that little is known in terms of comparative hospital management and, much less is known when it is referring to the British and Brazilian hospitals middle management. Thus, this work is considered an exploratory research in essence even though some perspectives closer to the descriptive approach are going to be used. Despite their differences, authors recognise that a research project can involve more than one approach (Selltiz et al., 1965; Churchill, 1995). This was done seeking to make it richer and the methodological rigidity was kept.

As seen, this research was defined as eminently quantitative. However, it can be said that this research indicates the direction of a combined survey and case study, meaning that techniques that induce to a qualitative classification is used (Miller, 1991), as shown below in Table 6.3. The qualitative perspective, is considered as illustrative and an enrichment of the results, i.e. a category of triangulation, which will be discussed later in this chapter.

Table 6.3 – Type of research

	Central Characteristics	*Prospective Outcomes*
Combined survey and case study	Survey method is combined with study of specific cases to illuminate relationships first portrayed in a co-relational pattern and then interpreted through case study to display processes and patterns. Cases selected after survey reveals those that are high or low on a criterion variable or those that display significant characteristics.	Relationship accompanied by process and pattern data revealing personal socialisation. Two data banks assembled: statistical data and case analysis data.

Source: adapted from Miller (1991).

One difference among the quantitative and qualitative methodologies is that the latter does not usually use statistical methods as a basic element to be considered. Thus, the quantitative method aims the measurement of units or homogeneous categories, while the qualitative method seeks in general, a more particular analysis. Another peculiarity of the quantitative research is due to the presence of hypotheses or questions formulated a priori, which is not commonly the case in qualitative research. However, the qualitative part of this research facilitates the refinement or emergence of some of them during the research process.

In certain aspects, some people may suggest that the quantitative method can be considered better than the qualitative. In relation to the reliability, the quantitative methodology, due to the use of standardised instruments - questionnaires and/or structured interviews, in general, with specific indicators - is shown to be more reliable (Bryman, 1998). In turn, the qualitative method is more susceptible in relation to the data identification and codification.

In turn, because it is based on process and interpretation, the qualitative method is viewed as gaining more in terms of internal reliability and validity. This methodology type presupposes the acquisition of data through the contact researched-researcher situation. Yin (1994) suggests that the qualitative research is based in two basic tenets: the detailed observation of the natural world to be researched; and the coherence, existence and compromise with the used theoretical model.

Hence, seeking breadth and, to some extent, depth and coherence, research instruments and techniques were taken from the two approaches of research methodology: quantitative and qualitative. The viewing of quantitative and qualitative approaches as mutually exclusive is no longer valid (Henwood, 1994). It must be explained that this assertion is applied to the micro or operational level. Bryman (1998) presented the debate of quantitative and qualitative research using different levels or approaches. At one level, the debate is conducted on the grounds of the different epistemologies that support each of these types of research, and the other level of debate takes place on the grounds of the techniques or methods which indicate quantitative or qualitative research. Osborne (1996) corroborates these points and suggests that the first level should be called macro or meta-approach and proposes that the other level should be the micro or operational level. Bryman (1998) defends that this debate represents two different paradigms at the meta-level and a cluster of research methods at the operational level.

Quantitative and qualitative researches as meta-approaches or paradigms became much more than their first interpretation would suggest. The qualitative and quantitative researches are not

just a menu of options where to choose techniques that one can apply, and cannot be perceived as a plain way of gathering and processing data. They condense a deep and strong debate about the nature and purposes of research in the social sciences. Epistemological issues are at the core of the contrast. As pointed out by Bryman (1998),

> "what distinguishes the debate that gained ground in the 70s was the systematic and self-conscious intrusion of broader philosophical issues into discussions about methods of research. The pivotal point for much of the controversy was the appropriateness of a natural science model to the social science" (p. 2f).

Therefore, the debate between quantitative and qualitative researches as meta-approaches to social research is an old one and an issue that still exists (see Osborne, 1996).

Positivism is the basis of the quantitative research. Qualitative research is based on phenomenological tradition. These two primary philosophical lines are fuelling such a debate (see Cuff, 1979; Delanty, 1997; Bryman, 1998; Bowling, 1997).

This work does not intend to discuss these lines of thought but the justification for the techniques currently used in both approaches. Seeking, therefore to improve the investigation. As posed by Osborne (1996, p. 9)

> "both these approaches have their worth, whilst their respective limitations are irresolvable in isolation. Social scientists therefore have increasingly looked to combining these approaches in order to reveal differing aspects of a social phenomenon".

The above perspective - involving both approaches to research - has received the attention of a significant numbers of authors (Jick, 1969; Miles and Huberman, 1994; Bryman, 1998; Hennwood, 1996; Hammersley, 1996).

The most common technique or method linked to the quantitative approach is the survey (see Siegel and Castellan, 1988; Hair et al., 1988), and the method most frequently associated with the qualitative approach is the case study (see Yin, 1994; Osborne, 1996).

Therefore, despite the importance of the debate, it is worthy to know that at the operational level, the use of methods and techniques that indicate quantitative or qualitative approach, such as survey and case studies or interviews are accepted and, to some extent, have been employed in the study of organisations (Jick, 1979; Miles and Huberman, 1994). The reason for employing these methods is often presented as due to the fact that "each has its own strengths and weaknesses" (Bryman, 1998, p. 172). The use of different methods can mitigate the weaknesses of each other. In this case, to view of the two methods as mutually exclusive methods is no longer valid (Henwood, 1994).

This fact leads the researcher to explore basic techniques of the two different approaches, at micro or operational level and, consequently, the use of their strengths to investigate the research problem. Bryman (1998) presented several ways in which these researches are combined, amongst others can be cited: the 'multisite/multimethod' study, Triangulation, Qualitative Research Facilitates Quantitative Research, Quantitative Research Facilitates Qualitative Research, Quantitative and Qualitative Research are Combined in Order to Produce a General Picture and Hybrids.

Therefore, the quantitative data would provide generalisability and the qualitative data would provide internal validity. Miles and Huberman (1994) also describe triangulation, i.e. forms that qualitative data can help the quantitative side of a study and vice-versa. These authors stated that "during analysis they can help by validating, interpreting, clarifying, and illustrating the quantitative findings" (p. 41). This work adopts this perspective. Hence, it seeks breadth, as well as, depth and coherence. Instruments and techniques of research will be taken from the two approaches - quantitative and qualitative - in a form of triangulation, which is discussed ahead in this chapter.

The use of quantitative or qualitative techniques is also linked to the research's objective. Thus, this work uses quantitative survey methods to test the research questions but further understanding is gained through the use of case study interviews. The survey enables the research findings to be generalised but the interviews improve the internal validity and understanding of the findings.

After conducting a survey using a structured questionnaire, semi-structured interviews with middle managers at chosen case study hospitals were undertaken. As defined by Kvale (1996, p. 27) "technically, the qualitative research interview is semi-structured: it is neither an open conversation nor a highly structured questionnaire". Semi-structured interview and document analysis will be used seeking complementarity and, to some extent, cross check results obtained from the survey (Jick, 1979; Osborne, 1996). What is being implied here is a form of methodological eclecticism; meaning, the combination of quantitative and qualitative methods is often proposed, on the ground that this promises to mitigate the respective weakness of each method.

The research was conducted in four main phases in Great Britain and Brazil:

Phase 1 – The quantitative element: the main survey was conducted using the structured questionnaire seeking to answer the working questions and test the hypotheses. Also, a documentary analysis took place to provide a wide view of hospitals. This phase was also responsible for elements of generalisation and external validity.

Phase 2 – Two hospitals were chosen in each country: based on available official sources or judgement of experts, data processing, and indicators as being representatives of best practice and/or high performance level.

Phase 3 – The qualitative approach: the researcher visited these hospitals and interviewed, using a semi-structured instrument, several managers involving decision making, planning and control processes. This phase enhances internal validity.

Phase 4 – The discussion of the questions and the test of the hypotheses considering the data gathered in phases 1 and 3. This data were processed, analysed and interpreted. This phase consolidated the elements for generalization, reliability and validity.

6.2.5 Defining locations in Great Britain and Brazil

As discussed in previous chapters 2 and 3, hospitals are special organisations. It means that they have particularities involving opportunism, internal power and modes of governance, among others. There are also differences between hospitals according to their situation, for example, rural, suburban or urban areas. Studies of hospitals have included some measures of location as being important to variations in hospital costs (Hendricks and Cromwell, 1989; Mick and Morlok, 1990; Vogel and Miller, 1995). These authors pointed out differences in hospital capacity, wages, and scope of services, and so forth, just considering their location.

Both Great Britain and Brazil have significant regional differences. Therefore, a 'concentration' is useful to avoid certain amount of these regional differences. The researcher must avoid certain disparities between regions of a country and also, national internal contrasts, e.g. Scotland has a health per-capita greater than England and the north region of Brazil is almost completely covered by the rain forest that brings about differences when comparing to the more urban southeast region. Thus, the research was focused in two representative geographical and well-defined areas or regions of the two countries. They have similarities between them and represent

well the numbers of their respective countries. Simultaneously, due to their representative position and strong characteristics they can be defined as adequate to the research.

Talking in terms of the WHO's MNSDS (Minimum National Social Data Set) the choice of the West Midlands Region in Great Britain and Minas Gerais State in Brazil is understandable (see Table 6.4 and Table 6.5).

Table 6.4 – Great Britain and West Midlands Region, Brazil and Minas Gerais State

Indicators	Great Britain[2]	West Midlands Region[3]	Brazil[4]	Minas Gerais State[5]
Population (1996)	58,801,500	5,317,000 (9.04% GB)	157,070,000	16,672,000 (10.6% Br)
Area (sq Km)	242,910	13,004 (5.35% GB)	8,547,403	568,648 (6.65% Br)
Density (persons per sq Km)	242	409 (169.00% GB)	18.37	28.42 (154.7% Br)
GDP	£ 730,767[6] million	62.1 billion[7] (8.5% GB)	US$ 768.9 billion	$ 67.2 billion (8.73% Br)
GDP per-capita	£ 12,427	£ 11,557 (93% GB)	US$ 4,882	$ 4,100 (84.0% Br)
Employment	26,900,000	2,452,300	53.0 %	61.4 % (SE)[8]
Unemployment	1,800,000 (4.5 % GB)	125,525 (4.9 % GB)	7.6 %	7.7 % (SE)[9]

Obs.: All data have internal consistence considering directed relation Country and geographical unit. There is no conversion between data comparing Great Britain and Brazil.

Both, West Midlands and Minas Gerais participate with 8.5% of the GDP. The GDP per capita in West Midlands is about 93% and Minas Gerais is about 84% of the national figures. The population of West Midlands represents about 9.0% of the Great Britain's population. As one can note Minas Gerais has 10% of Brazil's population. In terms of area West Midlands occupies 5.35% of the territory providing a density of 409 people for square Km – about 169% in relation to the national density. Minas Gerais figures show that its percentage in relation to the national density is about 155%, within a territory that represents 6.65% of the national area, very close to the West Midlands related position. The Employment and Unemployment rates between West Midlands and Great Britain are very similar to the respective ones between Minas Gerais and Brazil.

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[2] Sources: www.doh.gov.uk and www.statistics.gov.uk in February/March 2000, for 97/98.
[3] Sources: www.doh.gov.uk and www.statistics.gov.uk in February/March 2000, for 97/98.
[4] Sources: www.datasus.gov.br, www.ibge.gov.br, www.Saude.gov.br and www.fjp.gov.br in February/March 2000, for 96/97.
[5] Sources: www.datasus.gov.br, www.ibge.gov.br and www.fjp.gov.br in February/March 2000, for 96/97.
[6] Source: www.statistics.gov.uk in February/March 2000, for 1996.
[7] It is a calculated figure – the real figure is 8.5 % of the total.
[8] This figure is for the Southeast Region. Minas Gerais is part of this region and the number is representative to the State.

Tables 6.4 and 6.5 demonstrate remarkably similar profiles at country and selected regional level for Great Britain and Brazil.

Table 6.5 - Great Britain and West Midlands Region, Brazil and Minas Gerais State – other indicators

Indicators	Great Britain[10]	West Midlands Region[11]	Brazil[12]	Minas Gerais State[13]
Population aged over 65	15.7 %	15.6 %	7.87 %	8.34 %
Population less than 5 years old	6.3 %	6.4 %	9.95 %	9.51 %
Births (per 1,000 population)	12.5	12.7	21.71	19.96
Deaths	980 per 100,000 pop	1010 per 100,000 pop	5.75 per 1,000 pop	5.87 per 1,000 pop
Infant mortality (per 1,000 births)	6.0	6.8	37.39	28.84
Average of medical attendance	49,048,000 0.83	4,374,000 0.82	2.2 per person	2.3 per person
Hospital internment	9,962,000 or 16.94 per 100 pop	930,000 or 17.49 per 100 pop	7.6 per 100 pop	8.0 per 100 pop
Hospital beds (per 1,000 pop)[14]	4.3	3.7	3.64	3.81

6.3 Data collection method and forms

This section of the Chapter justifies and describes the development of the phases of the research. It starts describing the method and then outlines the main data collection. Some elements such as the covering letter and the final questionnaire are shown in the Appendix F.

6.3.1 Cross-sectional sample survey study

Due to its objectives and characteristics, this research uses a cross sectional study (Churchill, 1995; Aaker et al., 1998). This type of study describes a systematic collection of information from respondents that permits the understanding of the population of interest. This type of study is also expected when empirical evidence is relatively recent and also an increase on the general knowledge is necessary (Stagg, 1999). This study method is the best known as one of the most

[9] This figure is for the Southeast Region. Minas Gerais is part of this region and the number is representative to the State.
[10] Sources: www.doh.gov.uk and www.statistics.gov.uk for 97/98, in February/March, 2000.
[11] Sources: www.doh.gov.uk and www.statistics.gov.uk for 97/98 in February/March, 2000.
[12] Sources: www.datasus.gov.br, www.ibge.gov.br and www.fjp.gov.br for 96/97 in February/March, 2000.
[13] Sources: www.datasus.gov.br, www.ibge.gov.br and www.fjp.gov.br for 96/97 in February/March, 2000.
[14] The available data for hospital beds in Brazil is of 1992. Considering only public hospitals the figures are 0.9 and 0.59 hospital beds (for 1,000 pop) in Brazil and Minas Gerais State respectively.

commonly used by researchers (Churchill, 1995). More details about cross-sectional study are given in the Appendix J.

6.3.2 Data collection

There are two main forms of data collection: secondary and primary data. The secondary data sources were explored as much as possible, mainly in Great Britain, because it clearly contributed to the reduction of some negative effects when collecting primary data and, also, it was not expensive (Churchill, 1995). If the information is available as a secondary data it does not make any sense to ask for it in the primary data collection instrument. All secondary data referred to in the present thesis were cited appropriately at the point it was used. In so doing, emphasis is given in the primary data collection. Data collection is theoretically discussed in the Appendix J.

The form used to collect primary data to, consequently, fulfil Phase 1 was the structured questionnaire, undisguised and administered by mail. The research objectives and purpose of each question was clearly stated this makes the questionnaire an undisguised instrument. The questionnaire is structured because of the degree of standardization imposed, that makes the questions asked and permitted responses well predetermined (Pasquali, 1999). It is particularly important in the case of this research because all respondents in both countries must reply, as much as possible, to the same question. In addition, fixed-alternative answers were used and the respondent was limited to these stated alternatives.

One of the advantages of the use of a structured-undisguised questionnaire is its reliability. The frame of reference is well known from the alternatives. Being this way, if the question is asked again, they would respond in a similar way. Also, the provision of alternatives makes the question clear. Other advantages of the structured undisguised questionnaire are based on the fact that it is simple to administer and easy to tabulate and analyse (Churchill, 1995; Aaker et al., 1998; Pasquali, 1999).

The questionnaire was applied in both countries. Nevertheless, the Brazilian version had to go through a revision due to the cross-national nature of this research. This is fully explained in Appendix J.

Churchill (1995) posed that "although much progress has been made, designing questionnaires is still an art and not a science" and the questionnaire is even regarded as an imperfect art (Aaker et al., 1998). Using the considerations of Schuman and Kalton (1985), research objectives require consideration of two important issues: constitutive and operational definition (as seen in Table 6.2) and population/sample. Theses issues define a starting point for the process, to some extent. Depending on the concepts (constitutive) to be approached, the content of the questions (operational) varies (Kerlinger, 1979). Equally, the fact that the researcher can more easily ask questions directly to people also affects the preparation of the questionnaire (Pasquali, 1999).

Therefore, the working questions and hypotheses guided the questionnaire construction. They defined what information to be sought because they specified what relationships were going to be investigated. The researcher has to gather information on the managerial dimensions or constructs in order to discuss the questions and test the hypotheses (Kaplan, 1964; Churchill, 1995; Pasquali, 1999).

The questionnaire was divided into 8 sections:

1. Characterising the respondent;
2. Characterising the access to cost information;
3. Characterising the cost information system;
4. Decision-making and/or problem solving;
5. Characterising managerial control;
6. Characterising managerial planning;
7. Hospital and managerial planning and control; and
8. Hospital cost and resource information.

The name of the sections of the questionnaire did not coincide with the name given to managerial dimensions or grouped factors. The objective here was to make the questionnaire more user-friendly, thereby improving the response rate. A summary of the questionnaire is accessible in Appendix B. The final questionnaire applied in Great Britain and Brazil is presented in Appendix C and Appendix D respectively.

Each question chosen was tested with the application of issues such as: understanding the level of the question as a whole and their constituent words, the level of items or variables aggregation also present in the questions, the timing of each question and so on. Depending on the results of the test, questions were kept, split, changed, moved, or removed. Also, a scope of answers and an applicable scale was used. Again, a group of tests took place such as pertinence of the scope of

answers and scales. A new scope of answers or scale was developed when it was required. However, for the sake of coherence and simplicity a similar scale for every question was adhered to as much as possible.

When this first version of the questionnaire was finished, it was submitted to a group of experienced academics and researchers in both countries for considerations. After this, it was pre-tested. Before the pre-test stage in Brazil, a special process had to be undertaken to assure reliable translation, which is discussed in the Appendix J.

6.3.3 Questionnaire Pre-test

A pre-test was conducted with two main objectives. Firstly, it was done to ensure that the questionnaire met the expectations about the information it was designed for (Aaker et al., 1998). Secondly, it was done to establish the appropriateness of the phrasing, content, sequence, and physical characteristics of the questionnaire (Pasquali, 1999).

6.3.3.1 Pre-testing the questionnaire in Great-Britain

This phase took place in June 2000 and used people from the academic and management community, i.e. three academic experts and four managers. The academics pre-tested the questionnaire firstly to raise all sorts of potential problems, mainly in terms of content and objectives.

Figure 6.2 – Great Britain – pre-test: problems found and solutions

Problems/observations	Corrections/Amendments
Questionnaire too long.	Grouped some questions, made consistent concision, reduced the number of questions.
Seems daunting.	Improved the design and appearance, reduced the amount of phrases.
Incompatible anchor points in some scales.	Anchor points were changed.
Need to improve wording.	Questions were re-written.
Some questions were not exhaustive.	They were reformulated.
Group questions by sections to facilitate or improve focus.	Questionnaire was divided into sections.
Do not number the pages of the questionnaire.	Page numbers were dropped from the questionnaire.

Two methods are recognised as being commonly used in terms of pre-test: protocols and debriefing. The former is understood that the respondent thinks out loud as he answers each

question and in the latter questions and associated problems found are discussed after the questionnaire has been completed (Aaker et al., 1998; Pasquali, 1999). Taking into account participants' availability and time pressures, both methods were used. The issues and problems detected were promptly amended. Figure 6.2 shows this.

6.3.3.2 Pre-testing the questionnaire in Brazil

This stage took place in January 2001, after the completion of the fieldwork in Great Britain. To execute a pre-test in Brazil other steps had to be followed because the questionnaire was initially developed in English.

Initially, there was a dilemma involving cross-cultural and cross-national terms. However, evidence suggested that cultural variations do exist even within the same country. Culture concept hardly agrees in terms of variables involved. Most cross-cultural studies have been, in essence, cross-national studies (Schaupp, 1978; Cadogan et al., 2001). Thus, the choice between cross-cultural or cross-national study does not interfere with the objectives of this research.

Nonetheless, this study can be classified as cross-national because of the assumption that the universalists defend that there is no appreciable difference in managerial behaviour across cultures (Schaupp, 1978). Managers, when performing their basic functions, their behaviour is determined, in general, either functionally or interpretively. Should differences exist they are products of individual or organizational situation in its determined context that fits this research. Moreover, Child and Tayeb (1982, p. 24) set out:

> "in any case, the contingency approach, which had come to dominate organizational studies ... encouraged the view that national culture perhaps did not matter so much. Contingency writers singled out task environment, technology, scale, and other operational conditions as significant influences on organizations policies and structures, and on the jobs, work experiences, and hence the reactions of organization members ... so it began to seen that national and community cultures could be relegated to a minor role, at least for management's practical purposes".

Before performing the pre-test in Brazil, it was necessary to observe the requisites to declare the equivalence of instruments. It is also presented in the Appendix J.

After the questionnaire was considered to be equivalent, it was pre-tested in Brazil. Similar methods were used, i.e. using protocol and debriefing with, in this case, five academics and three hospital managers. The unique problem detected was "it seems daunting" and improving the design and appearance of the instrument solved it.

6.3.4 Questionnaire Pilot

The literature is not clear about the required size of a pilot sample. There are suggestions that the pilot size at this stage should be small (Green et al. 1988) and others suggest that the sample should not be a fixed figure but a function of the questionnaire and the target population (Hunt et al., 1982). An important point that must guide this stage is that this is "the most inexpensive insurance the researcher can buy to ensure the success of the questionnaire and the research project" (Churchill, 1995, p. 438).

The pilot test permits identification of any further problems with the questionnaire structure and to test the administration method. Equally important, it permits responses to be tabulated to check and ensure on the conceptualisation of the problem, obtained data and the method of statistical analysis (Aaker et al., 1998; Pasquali, 1999).

6.3.4.1 Piloting in Great Britain

A complete list of hospitals containing the names and phone numbers of all hospital managers in England was obtained from the NHS Executive Office[15]. From this list were elected randomly 45 hospital managers.

Questionnaires were sent to these managers with a covering letter attached. The letter was personally addressed and notified the respondent of the objectives of the research. It was printed on University headed notepaper and individually signed. Anonymity was guaranteed. The letter also informed the value to both the researcher and respondent of completing the questionnaire as discussed before, see Appendix D. Each questionnaire package included a pre-paid envelope for the return of the completed questionnaire. These actions sought to improve the response rate (Churchill, 1995; Aaker et al., 1998). From the total of 45, 24 questionnaires were returned after two weeks (see Table 6.6). After the follow-up process, 4 more questionnaires were sent back.

Table 6.6 – Pilot test in Great Britain

Questionnaires mailed	Questionnaires returned	Suitable questionnaires	Response rate
45	24 + 4 = 28	28	62%

All returned questionnaires were considered adequately completed and the response rate of 62% was considered satisfactory for experienced academics from Aston University.

[15] Binsley's Directory of NHS Management, 1999, Vol. 8, n.2.

6.3.4.2 Piloting in Brazil

A similar process occurred in Brazil. A list of hospital managers was obtained from different institutions, such as, Hospital Brazilian Association, Health Ministry, State and Municipal secretariats, hospitals foundations, etc. Such a list had been compiled in advance by some academics, mainly from the Federal University of Minas Gerais.

A similar sample of 45 managers was selected randomly for the pilot, see Table 6.7. From the total, 25 respondents returned them in the two weeks time and another 6 after the follow-up. The questionnaire package was prepared with the same material and similar characteristics used in Great Britain. The same strategy to mail and follow-up the questionnaires was adopted.

Table 6.7 – Pilot test in Brazil

Questionnaires mailed	Questionnaires returned	Suitable questionnaires	Unsuitable questionnaires	Response rate
45	25 + 6 = 31	30	1	67%

One questionnaire was considered unsuitable given that the respondent just completed the first 3 pages. When contacted by phone, he explained it had been a mistake, someone from his staff thought he had already finished it and returned it. There is no available information about response rates in the Brazilian health service with which to compare. Experienced academics from other areas considered 67%, in accordance with their area, a satisfactory response rate.

6.3.5 Sampling

To determine a sample, it was initially necessary to determine the population (Bowling, 1997). The population consisted of the intermediate level managers of public hospitals in Great Britain and their counterparts in Brazil. Therefore, two groups were formed.

There are different types of hospitals. They vary in category, number of beds, daily attendances, and length of stay and so on. Thus, secondly, a homogeneous group of hospitals was sought. It was necessary for probable future generalisation. Also, it was kept in mind the exigencies of sample and data collection equivalences.

The third step was to produce a representative sample of the intermediate level managers using valid criteria for both countries. The simple random sampling was adopted (Bowling, 1997).

6.3.6 Sample size

The sample size is dictated by the need for a sufficient number of cases to conduct satisfactory data analysis. One can certainly find an enormous variety of sample sizes in the literature, from less than 10 up to thousands.

Nonetheless, there are other practical elements to be considered when defining a sample size. Certainly one is the response rate. If the response rate is poor, despite future problems with non-response bias, a big sample size will be needed to guarantee a number sufficient for information to be processed.

Another essential criterion to justify a sample size is certainly the type of analysis and tests are going to be used: parametric or nonparametric. Parametric statistics demands a sample distributed in a certain way, for example, from a normally distributed population (Siegel and Castellan, 1988; Hair et al., 1998). It demands a considerable number of questionnaires to allow confidence in the normal distribution. Spector (1992) defines that in order to adequately access reliability and validity of the measures one needs to use 100 to 200 cases, however, Hair et al. (1998) defines that sample sizes should be between 200 to 400 respondents, less than 200 or more than 400 would cause perturbations on the analysis. The necessity of such a number of cases and fulfilment of these conditions persuaded the researcher to adopt a different path.

At a glance, the issue arises as being why the present study does not apply a fully parametric analysis. This is for two initial reasons. Firstly, when the study was designed, generic knowledge on the subject had to be derived, which was best done applying a non-parametric analysis. Secondly, because of money and time constraints, the necessary input data for a parametric analysis could not be obtained. However, parametric tests, when acceptable, were applied.

Nonparametric statistics, also known as distribution free statistics, were the adopted most in this research. Other important reasons for that include, the fact that nonparametric techniques are uniquely suited to the data of behavioural sciences (Siegel and Castellan, 1988). Nonparametric statistics are largely applied in clinical research. Therefore, both clinicians and administrators can interpret results of the thesis in the future (Bowling, 1997). A final advantage of nonparametric tests is their usefulness with small samples (Siegel and Castellan, 1988).

6.3.7 Sampling in Great Britain and Brazil

The research was undertaken in hospitals of the West Midlands Region and Minas Gerais State. These organisations were considered public and also, possessed common and compatible characteristics with the intended results.

Seeking sample and data collection equivalence (discussed in Appendix J), public hospitals were determined using secondary data and general criteria to produce equivalent groups in both countries. As general criteria, the following were excluded from the study:

- Specialised hospitals (i.e., geriatric, psychiatric, and rehabilitation);
- Hospitals with fewer than 100 beds;
- Hospitals without an available and official information (system) about costs;
- Hospitals with average length of stay of longer than 30 days.

Hence, 26 hospitals in Great Britain and 22 in Brazil were detected as eligible and 150 intermediate level managers were randomly selected as unit of research in each country.

6.3.8 Main survey

Even though several contacts have been made in advance by phone asking for collaboration with the research, the administration of the main survey followed the strategy of the pilot test. Similarly, each mailed package contained a personally signed and addressed covering letter, a questionnaire, and a pre-paid envelope. Because of the higher number of questionnaires, this time the process was executed in batches. Packages were mailed in groups of 30 per week. It allowed a comfortable time of one week to follow-up each batch of questionnaires. This allowed two follow-up waves.

In addition, a number of questionnaires were delivered personally to guarantee an acceptable response rate. The interviewed managers were asked to respond to the questionnaire. These were collected personally. The NHS Executive was contacted and a person from the staff, with close contacts with hospital managers, kindly agreed to lend his name supporting the research. This eased contacts, and should have improved the response rate. The process of primary data

collection in England started in August and ended in December 2000, with the interviewing process concentrated during November and December.

The process in Brazil started in January and finished in April. Table 6.8 gives a general view of the whole process.

Table 6.8 – The main elements of the research

	Great Britain	**Brazil**
Region	West Midlands Region	Minas Gerais State
Type of Organisation	Public	Public
Phase 1		
Number of Organisations	26 NHS trusts	22 Public Hospitals - SUS
Questionnaires sent out	150	150
Questionnaires returned	90	120
Phase 3		
Number of Interviews	10 middle managers	22 middle managers

The response rate obtained in Great Britain was 60%. This figure is less than the one obtained during the pilot. Surprisingly, the response rate in Brazil was higher than the one obtained in the pilot, 80%. This may be explained by the fact that, in Brazil, this research had an extra support from health authorities. A formal letter was sent from State and Municipal health secretariats to hospital chief executives asking their support to the research, and this may have improved the response rate.

There were no occurrences of item non-response, that is questions left unanswered or answered incorrectly. However, it must be said that one questionnaire in England and two questionnaires in Brazil had to be refused because they were completed by persons other than a middle manager, as identified in question 5 of the questionnaire.

6.3.9 Examining the non-response bias impacts

One of the more striking disadvantages concerning the survey is the fact that some questionnaires are not completed or not returned. As they are part of the sample, there is the risk that the achieved result from the respondent group may cause problems to the quality of generalization due to the bias caused by the no-respondent individuals. This concern is justified

as if the no-respondents' profile is very different from the respondents' profile, thus the achieved result cannot be generalized.

To evaluate this bias impact it is necessary to perform a statistical check. Armstrong and Overton (1977) proposed a method of non-respondents' impact, which is well accepted between researchers. This method consists of a comparison between the perception of the first 75% respondents and the last 25% of these. The authors consider that the profile of the last 25% is similar to the true non-respondents' profile.

Thus, in the current study, the Mann-Whitney statistic test was used. This test is classified as non-parametric. This test checks the hypothesis of null equality between variables of two groups: the 75% first returned and the 25% last returned questionnaires.

From the results shown by the test concerning the comparison of the 92 variables present in the questionnaire, it was confirmed that in Great Britain only two variables were different between the two groups, while in Brazil only 8 variables were found to be different. Although it is desirable that no differences are shown by any variable, the small figure of variables observed indicates a small impact, which does not discredit the intended generalization when defining the sample size. In addition, Schweikart (1986) states that a high response rate, which was the case in Brazil, makes non-response analysis unnecessary.

6.3.10 Statistical Treatment and Analyses

Statistical treatment and analysis are discussed as and when necessary and are also presented in Appendix J. The gathered data was coded according to a coding manual, which maps the variables. Soon after that, the data was introduced and processed in a microcomputer. The software used was the SPSS10 to all statistical procedures and tests (see, for example, Cohen, 1977; Labovitz & Hagedon, 1981). All relevant statistics' tests were done and are shown together with the results presentation.

6.4 Phase 3 - qualitative approach

The quantitative method supports generalization concerning similar groups through the use of indicators and the cause-effect relation between items or variables. As measures developed with qualitative methods are based on participant observation, life history, and content analysis, they

may be viewed as more imprecise. However, they allow the attainment of more detailed knowledge, which quantitative tools (questionnaires) cannot obtain, providing more inductive data analysis process (Lakatos and Marconi, 1985, 1991).

This research was also concerned with semi-structured and undisguised personal interview seeking the accomplishment of Phase 3. The objective of the phase and the instrument was the gain of internal validity completing the questionnaire relatively to the hypotheses. As advocated before, it makes the results even richer.

6.4.1 Interview

The interview may be considered a greatly significant technique in the process of data collection. It provides: mainly more flexibility, more possibility for the evaluation of attitudes, conducts, reactions; possibility of getting more accurate information and with immediate confirmation, besides providing the opportunity for getting data not founded in documentary sources. According to Cervo and Bervian (1996), the researchers refer to the interview whenever

> "they need to obtain data that cannot be found in records and documentary sources and that may be provided by certain people. These data will be used as much for 'facts' as for cases and opinions study."

The interview was characterised by a direct face-to-face conversation between each respondent and the researcher (Fowler and Mangione, 1990; Churchill, 1995). All interviews took place at the managers' office and were booked at their convenience.

Open-ended questions were used for the interviews, i.e. only an 'initial stimulus' was given or the question. The same group of questions was used for all subjects. After the 'initial stimulus' the interview became unstructured. The interviewer attempted to follow an outline (see Appendix F). However, variations were permitted when interviewing the subjects and, also, the content of interviews could vary (see Fowler and Mangione, 1990; Kvale, 1996).

This freedom in conducting interviews is responsible for the advantages and disadvantages of the method. Because the respondent is not constrained to a fixed set of replies and the interviewer is interacting with him, a more accurate picture can be drawn respecting his true perceiving consideration about the issue of interest. Interviewers must to be trained and skilled in doing depth interviews. Criticisms are related to the possibility of the interviewer influence the results of the interview. They are also considered more expensive and time consuming than mail

questionnaires. This can make it difficult in obtaining cooperation from the subjects of the research. In the case of this thesis, the researcher conducted the interviews personally.

6.4.2 Triangulation

McGrath (1982) states that it is impossible to carry out a flawless study. Any research method chosen will have inherent flaws and limitations, and the choice of the method can limit or lead to poor conclusions. Therefore, it is fundamental to obtain corroborating evidence from using a variety of methods. This condition can be seen as triangulation. A possible rationale for triangulation is that different measures or methodologies are complementary to each other, so as the weaknesses of a methodology or technique could be overcome by strengths of another, and vice-versa. According to Cunningham et al. (2000), also the validity and reliability of data would be enhanced by incorporating opinions of people with different or diverse standpoint.

Jick (1979, p. 602) set out that the triangulation metaphor comes from navigation and military strategy, which "use multiple reference points to locate an object's exact position". Triangulation is not a new concept and Scandura and Williams (2000) points to studies conducted in the 1960s and 1970s. Triangulation can be employed for the purpose of measurement, data collection or research strategy. Jick (1979) conducted a study about anxiety and job insecurity during a merger that employed data from questionnaires, interviews, co-worker observations, and company records.

As discussed in Miles and Huberman (1994, p.41)

> "why link qualitative and quantitative data ... (a) to enable confirmation or corroboration of each other via triangulation; (b) to elaborate or develop analysis, providing richer detail; and (c) to initiate new lines of thinking through attention to surprises or paradoxes, 'turning ideas around', providing fresh insight. ... Qualitative data can help the quantitative side of a study."

Furthermore, as Miles and Huberman (1994, p.41) set out "Why link qualitative and quantitative data ... During analysis they can help by validating, interpreting, clarifying, and illustrating quantitative findings, as well as strengthening and revising theory". The use of the qualitative approach facilitates the identification of "how" and "why" statements throughout the hypotheses testing (Yin, 1994). This study does not intend to use case studies to show causality but to provide an exploratory descriptive understanding. Yin (1994, p. 35) stated that

> "internal validity is a concern only for causal (or explanatory) case studies, in which an investigator is trying to determine whether x led to event y. ... this logic is inapplicable to descriptive or exploratory studies (whether the studies are case studies, surveys or experiments), which are not concerned with causal statements".

However, the triangulation will permit complementarity and, to some extent, cross check results obtained from the survey (Jick, 1979; Osborne, 1996).

Therefore, in this research, semi-structured interviews were conducted in two hospitals in each country seeking to illustrate, clarify and explain the hypotheses test presentation (see, for example, Cunningham et al., 2000).

6.4.3 Hospitals chosen in Great Britain and Brazil

The hospitals in Great Britain were chosen firstly, considering their positions in the National Reference Cost Index (published by the NHS Executive, 1999) and, their Chief Executives granted wide access for visit and interviews. They presented an adjusted index for local variations in factor cost around 100. Reference Costs are defined by the NHS Executive as being costs that relate to the delivery of NHS Heath Services for NHS Patients by NHS Providers. And, The new NHS (DoH, 1998) set out that

> "The government will develop a programme which requires NHS trusts to publish and benchmark their costs on a consistent basis. This will provide a national schedule of 'reference costs', which itemise the cost of individual treatment across the NHS."

These hospitals can be considered typical general and District General hospitals. Secondly, they presented high response rate of the questionnaires and after data processing, they presented high means for the managerial dimensions/constructs: cost information perceived usefulness and attitudes, managerial planning and managerial control. Some general characteristics of the British hospitals are presented in Table 6.9.

Table 6.9 – Characteristics of British hospitals

Indicators	MAIOR Hospital	MENOR Hospital
Number of beds	More than 500	Less than 500
Total Employees	3,985	1,697
Total Income	£ 177,915,000	£ 56,564,000
Total Expenditure	£ 171,109,000	£ 53,231,000

Source: adapted from Binsley's Directory of NHS Management, 1999, Vol. 8, n.2; and research data.

As much as possible, similar criteria were followed in Brazil. But some restrictions had to be applied. First, there is not anything similar to a National Reference Cost Index in Brazil. There is not even an acceptable surrogate. Second, for obvious reasons, values of income and expenditure had to be ignored as potential indicators for the choice.

Therefore, the list of hospitals was made and a panel of three researchers from the Universidade Federal de Minas Gerais and two specialists in public hospital cost information from Minas Gerais Secretary of State of Health, based on their judgement and expertise, determined the two hospitals. The two chosen Brazilian hospitals can be considered typical general and district hospitals and also, their Chief Executives granted wide access for visit and interviews. After data processing, their group also presented high response rate of the questionnaires and high means for the managerial dimensions/constructs: cost information perceived usefulness and attitudes, managerial planning and managerial control. Some general characteristics of Brazilian hospitals are presented in Table 6.10.

Table 6.10 – Main characteristics of Brazilian hospitals

Indicators	BIGGER Hospital	SMALLER Hospital
Number of beds	More than 500	Less than 500
Total Employees	2,240	920
Total Income[16]	R$ 20,314,000	R$ 4,416,000
Total Expenditure[17]	R$ 52,394,000	R$ 21,603,000

Source: Information provided by the hospitals' Finance Department (98/99) and research data.

6.4.4 Sampling for interviews

Having chosen the hospitals settings, sampling the managers to be interviewed in Great Britain and Brazil followed similar procedure and criteria. From the list containing the names of the managers the middle managers were randomly chosen, from areas such as human resources, supplies/consumables, equipment, finance and other clinical areas.

First, a letter was written to the Chief Executive of hospitals explaining the research and asking for access (see Appendix G). All hospitals granted access. Hence, a letter was sent to the chosen hospital managers explaining the research and telling that the researcher would make a phone call seeking for a book appointment (see Appendix H). The contact by phone took place and the interviews were booked at their convenience.

The sample size was defined according to a model already defended by Sandberg (2000). This author, from studies presented, stated that after certain number of interviews "the variation of a

[16] Total Income corresponds to reimbursement from the Central Government – SUS.
[17] The difference between Expenditure and Income is covered by State and Municipal funds.

phenomenon reaches saturation ... after which no new conceptions emerge" (p. 13). In this study, the variation in planning and control using cost information was considered as starting to repeat itself after about 8 interviews in Great Britain and 18 in Brazil. Ten British public hospitals middle managers and 22 Brazilian public hospital middle managers were interviewed.

Chapter Summary

This Chapter has set out the framework from which the researcher obtained data. It started by presenting the epistemological roots for the techniques chosen to discuss questions and hypotheses of this research. Hence, it set out the questions and hypotheses.

It addressed how the research theoretical framework was developed and how the population and sample to be investigated were identified. It was discussed how the main research instrument was developed for both countries, rigorously pre-tested and pilot-tested and mailed to calculated and justified samples of 150 public hospital middle managers in specific regions of Great Britain and Brazil. From these samples, 90 and 120 questionnaires were returned from British and Brazilian managers respectively. Having processed the data and studied variables behaviour, the researcher concluded that there is no reason to suspect that there is any non-response bias. Some elements of processed data and other information defined the hospitals at which to conduct the qualitative approach.

These hospitals, four in the total were visited and 10 and 22 middle managers were interviewed in Great Britain and Brazil respectively. Similar rigour was used to drive this part of the research. This thesis shall now go on to discuss the findings from this research in the next chapter.

Chapter 7 - Exploratory results

The preceding chapters have explained the healthcare systems, as well as the perspective of hospitals as organisations, in Great Britain and Brazil; reviewed relevant literature and explained the research methodology. This chapter presents results of this research. This study applies models and statistical techniques already employed by other researchers who have investigated the use of accounting information - considering contingency theory - in different countries (see, for example, Horovitz, 1980; Schweikart, 1986). Schweikart (1986) studied the relevance of managerial accounting information in a cross-national analysis, which involved seven countries.

In relation to this chapter, it is useful to note Schweikart's suggestion (1986, p. 544) that

> "It is important to note that items were developed for each construct so that managers attitudes toward their educational, economic, governmental and cultural environments could be measured. Items were comprised of attitudes rather than facts because a cognitive motivation was assumed".

This was applied in this research. A Kruskal-Wallis analysis of variance test was used to determine if there were significant differences in country mean scores for each of the variables/items involved (see Schweikart, 1986). In the second section of this chapter, the shaded areas show those variables/items that produced a significant score at the 0.05 or better level of confidence. Kruskal-Wallis is a non-parametric test.

The first section of this chapter is the study of the research instrument reliability. This seeks to support future analysis and also provide the initial development of a scale capable of being used in other researches. This chapter is divided into two further sections. In the second section, each question posed for this research is debated, corresponding to:

Number	Question	Section
1	*What is the general profile of the public hospital managers? What can be said about their experience, sector and time in charge?*	Chapter 7.2.1
2	*How do they consider their decisional roles? What can be said about their goal congruence when performing planning and control processes?*	Chapter 7.2.2
3	*Do they consider the available cost information relevant? To what extent? How accessible is it?*	Chapter 7.2.3
4	*Are they effectively involved in decision-making and problem solving, in terms of non-programmed decisions and problems? What is the hierarchical influence on the non-programmed decision-making?*	Chapter 7.2.4
5	*Do they use cost information when planning and controlling in terms of human resources, supplies and equipment? To what extent? Do they consider cost information useful for benchmarking and improving organizational functions? Is any complex rationality identifiable?*	Chapter 7.2.5
6	*Do they plan effectively? To what extent do they do it? Do they use different predictive models? Do they consider cost information useful to support planning processes?*	Chapter 7.2.6
7	*Do they control effectively? Do they consider cost information useful to support control processes? How do they consider control mechanisms and forms of control?*	Chapter 7.2.7
8	*Do managers perform planning and control differently? Do clinician managers and administrative managers perform planning and control differently?*	Chapter 7.3

Thirdly, grouped factors and managerial dimensions/constructs explored in this research are presented and analysed comparatively: organizational managerial factors, cost information specific factors, cost information perceived usefulness, managerial planning and managerial control. This discussion seeks to contribute to fulfil the objective of this study, i.e., the understanding of the usefulness of cost information in planning and control in hospital management in both countries. Conclusions are drawn at the end of the chapter.

7.1 The research instrument – a scale reliability study

The study of the instrument validity has been discussed in Chapter 6. Detailed pre and pilot-testing stages provided sufficient validation of the adopted process and measures. The initial development of an instrument capable of measuring the use of cost information in planning and control within public hospitals was identified in Chapter 1 as being an objective of this research. Therefore, the study of the instrument was made necessary. This study was made in three steps.

Overview of steps in study of reliability:

Phase	Analysis and Presentation	Purpose	Results
1	Assessment of individualised items of each question of the questionnaire by Country.	Check internal consistency of items and provide support to the summated ratios used later in this chapter.	Appendix I
2	Assessment of individual questions or observations of the questionnaire are presented.	Summarise and provide an overview of variables, observations and questions and measures.	Appendix I
3	Assessment of dimensions/ constructs reliability that represents questions of this research.	To provide support to future analysis and discussion using these dimensions and constructs.	Table 7.1
4	Assessment of dimensions/ constructs normal distribution.	To provide support to any statistic tests, parametric and non-parametric of these constructs/dimensions.	Figure 7.1

7.1.1 Reliability Analysis

When one designs an instrument to measure a specific attribute or dimension/construct, reliability of the instrument is essential. As stated by Lampe et al. (1999, p. 284)

> "One way to estimate the reliability of a research instrument, and the responses obtained therefrom, is to measure the internal consistency of the instrument items. ... Consistency of responses to many items in an instrument can potentially allow the researcher to claim reliability."

Internal consistency has been widely used by researchers as an acceptable surrogate for reliability. The same procedure is applied in this thesis.

From measurement theory it is observed that a measure of value may be represented by the equation:

$$V_o = V_v + E_a + E_s$$

Where V_o represents the value observed through the scale, V_v represents the characteristic's true value, E_a represents the accidental error (random), and E_s represents the systematic error.

The aim of the reliability analysis is to check how free of accidental error the scale is. This means that if the scale is applied repeatedly to the same group of people it must reflect stable values for the observed phenomenon. There is the following example from Phillips (1974, p. 248) to consider:

> "If a scale is used to measure an individual's weight and the indicator points to the same number of Kg when the individual gets up on the scale and then gets down successively several times, then we have proved that the scale is a measuring tool in which we can rely ..."

To evaluate internal consistency and, consequently, the scales' properties in the current study, Cronbach's Alpha coefficient, developed by Cronbach (1951), defended by Malhotra (1996) and Churchill (1995), is calculated. It has been accepted and widely used by researchers (Lampe et al., 1999).

Lampe et al. (1999, p.287) stated "conceptually, this is recognized as a ratio of total covariance to total variance". Cronbach's Alpha is calculated using the following formulae (Cronbach, 1951):

$$\textbf{Cronbach's Alpha} = \frac{k * med(COV)/med(VAR)}{1+(k-1)*med\,(COV)/med\,(VAR)}$$

Where **k** is the number of items in the scale, **med (COV)** is the rate of covariance between the items, and **med (VAR)** is the rate of variance between the items.

According to Hair et al. (1998), a value equal at least to 0.70 reflects acceptable reliability, although it is acknowledged that this is not an absolute pattern. Nevertheless, the authors explain that Cronbachs' Alpha value under 0.70 is accepted if it is an exploratory research. However, to Malhotra (1996) the cut off value to be considered is 0.60, i.e., the author considers that with a lower value the reliability is unsatisfactory. Nunnaly and Bernstein (1994), similar to Hair et al. (1998), point out a value equal to 0.70 as a modest value. The authors still emphasize that if important decisions are to be taken from the evaluated scales, the researchers must then strive to ensure the instrument reliability reaches a Cronbachs' Alpha value over 0.90.

In this exploratory study, scales with the Cronbach's Alpha value around 0.60 will be deemed reliable as recommended by Malhotra (1996). Also, due to the characteristics of this study the scales, variables, dimensions/constructs definition will not pass through a refinement. Lampe et al. (1999) stated that the Cronbach's Alpha may well be manipulated through refinement.

In this research, responses to items or questions related to an overall variable were averaged to derive an overall score for that variable when it was made necessary (see Mak, 1989).

7.1.2 Study of reliability: Dimensions/Constructs

Table 7.1 shows that all elements explored in this study presented acceptable internal consistency of items represented by a Cronbach's Alpha higher than 0.60. The unique exception is the dimension decision-making, problem solving in Brazil that presented an alpha equal 0.60. It must be highlighted that the alpha obtained for the dimensions/constructs directly aimed at in this research, i.e., perceived usefulness of cost information, managerial planning and managerial control are positioned above 0.75. Thus, according to the values obtained it can be stated that the research instrument observes the indispensable requisite of reliability.

Table 7.1 – Presentation of the study of the research instrument's reliability for dimensions/constructs

Dimensions/Constructs[1]	Cronbach's Alpha	
	Great Britain	Brazil
Organizational Managerial Factors	0.6389	0.7104
Cost Information Specifics Factors	0.7745	0.8609
Decision Making, problem solving	0.6507	0.5996
Cost Information perceived usefulness and attitudes	0.8946	0.7542
Managerial Planning	0.7785	0.7784
Managerial Control	0.8064	0.8073

7.1.3 Test of Normality: the studied dimensions/constructs

This section presents the study of normality of the dimensions/constructs. Even though this research has moved towards a distribution-free, non-parametric, statistic analysis, the test of normal distribution is of value for future consideration in other studies.

[1] More details of Dimensions/constructs are presented in Appendix B.

Figure 7.1 – Normal distribution of the dimensions/constructs

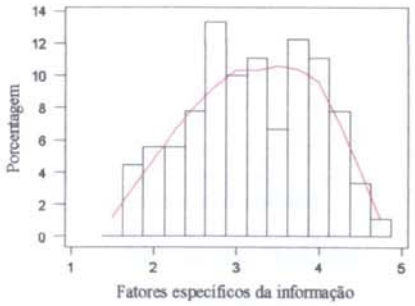
Organisational Managerial Factors

Great Britain

Organisational Managerial Factors

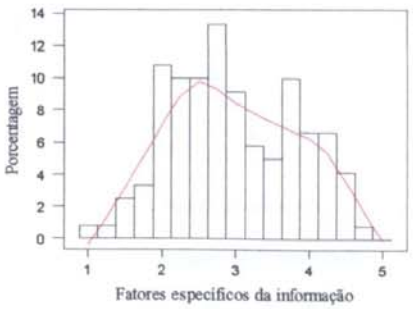
Brazil

Note: Kolmogorov-Smirnov Test → p > 0,15 (Great Britain) and p > 0,15 (Brazil)



Cost Information Specific Factors

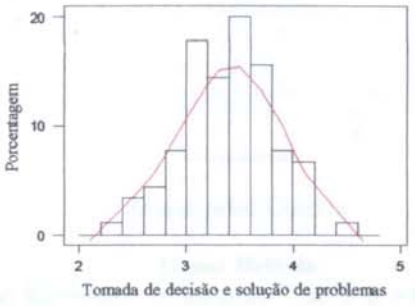
Great Britain



Cost Information Specific Factors

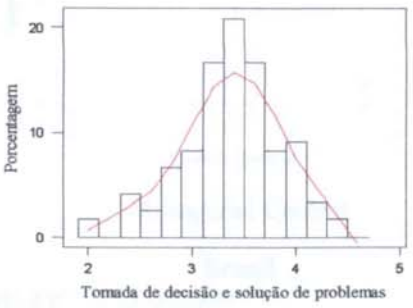
Brazil

Note: Kolmogorov-Smirnov Test → p = 0,067 (Great Britain) and p = 0,136 (Brazil)



Decision making, Problem solving

Great Britain

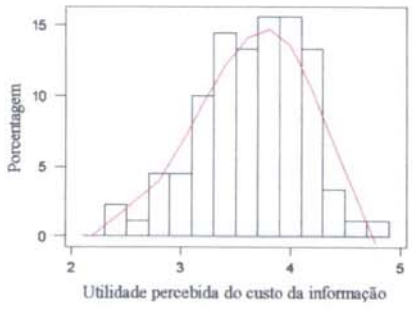


Decision making, Problem solving

Brazil

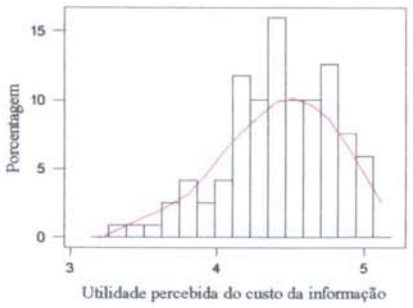
Note: Kolmogorov-Smirnov Test → p > 0,15 (Great Britain) and p > 0,15 (Brazil)

Figure 7.1 – Normal distribution of the dimensions/constructs (continuation)



Cost Information Perceived Usefulness

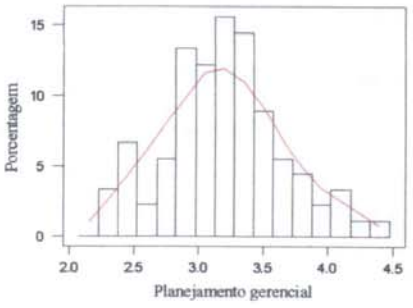
Great Britain



Cost Information Perceived Usefulness

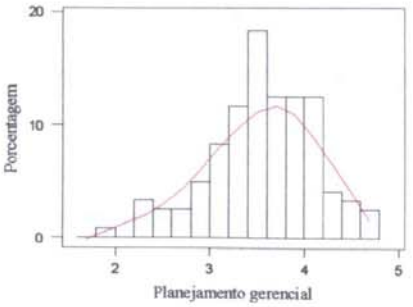
Brazil

Note: Kolmogorov-Smirnov Test → p > 0,15 (Great Britain) and p > 0,15 (Brazil)



Managerial Planning

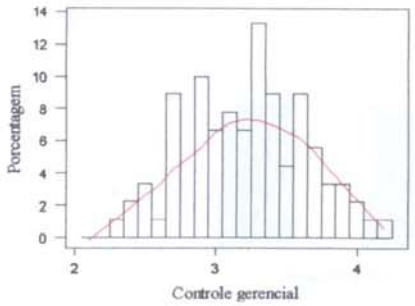
Great Britain



Managerial Planning

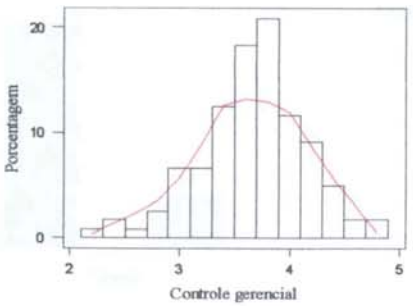
Brazil

Note: Kolmogorov-Smirnov Test → p > 0,15 (Great Britain) and p > 0,15 (Brazil)



Managerial Control

Great Britain



Managerial Control

Brazil

Note: Kolmogorov-Smirnov Test → p > 0,15 (Great Britain) e p > 0,15 (Brazil)

The normality of the 6 dimensions/constructs by country was assessed through the Kolmogorov-Smirnov test. This test checks whether the sample obeys certain distribution, i.e. in this study, whether the dimensions/constructs follow the normal distribution. To this test the hypothesis is of no normal distribution. Therefore, due to a $p > 0.05$ one can conclude that the hypothesis of no normal distribution should be rejected. In this thesis all dimensions/constructs presented normal distribution.

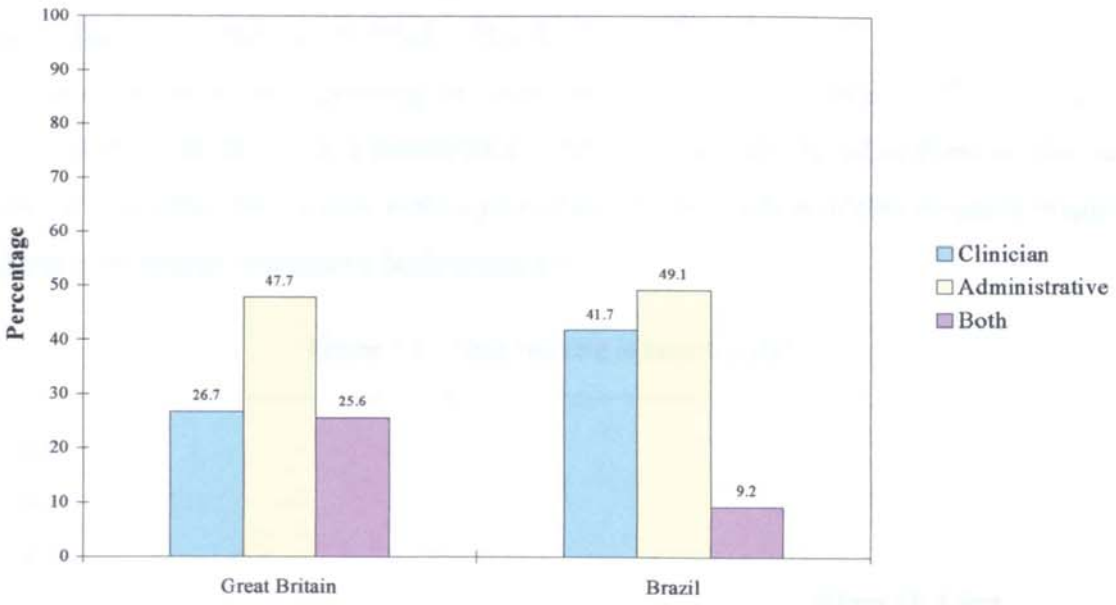
7.2 General results and analysis

7.2.1 Hospital Structure Relation Specific Factors

This section discusses the first research question[2] and the Hospital Structure relation – specific factors (see Table 6.2, Chapter 6). It presents professional background (Q1), time working in hospitals (Q2), area, sector or service in charge (Q3), time in charge (Q4), position within the hospital (Q5), available cost information (Q35a), and available resource information (Q35b). According to the objectives of this research the intermediate level is the position within hospitals of all subjects, therefore 100% of the respondents are assigned to 'middle management' (Q5).

This research has used several statistical measures of organisation characteristics seeking to gain a deeper understanding of the profile of both hospital and respondents. All relevant statistics that support the analysis are presented in this chapter; however, complementary measurements were included in Appendix I.

Figure 7.2 – Background of the respondents (Q1)



Examining the general profile of the public hospital managers, the first managerial factor corresponds to the respondent's background (Q1). It defines the association of the respondent as a member of the organisation and, consequently linked with the mode of governance, which was discussed in Chapter 4 of this thesis. As shown in Figure 7.2, 47.7% of the British respondents had an 'administrative'[3] background, whereas 26.7% of the respondents were 'clinicians' and respondents with 'both' backgrounds presented 25.6%. Clinicians that took courses in an area

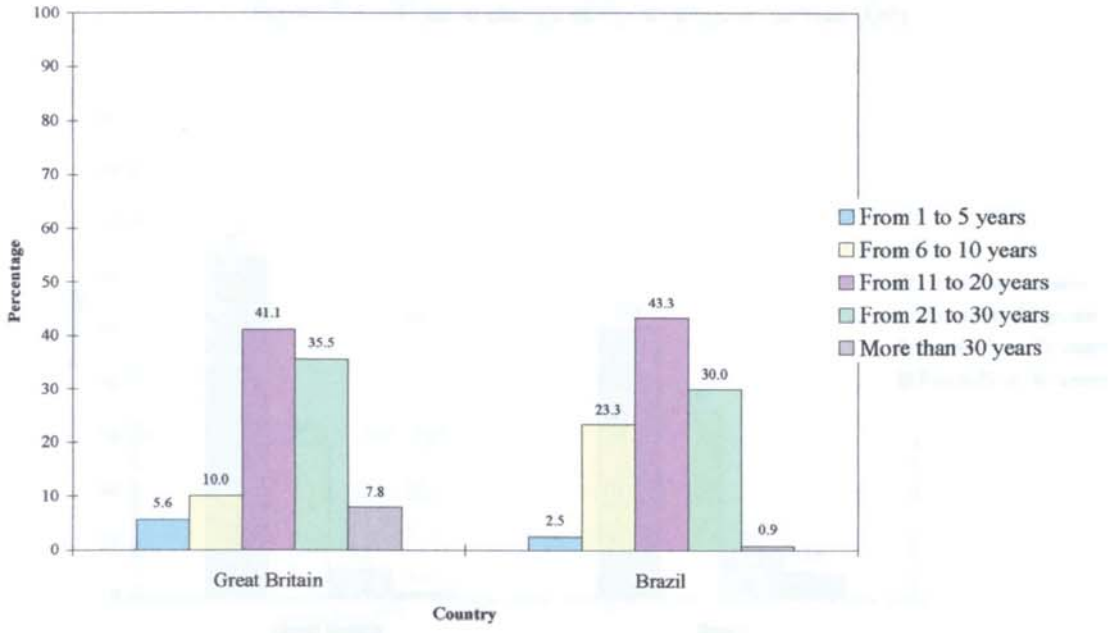
[2] *What is the general profile of the public hospital managers? What can be said about their experience, sector and time in charge?*

considered to be of administrative content represented the vast majority of the 'both' backgrounds category.

Brazil presented a similar distribution in terms of the administrative background and the other two categories. It is important to notice that the difference between the 'both' background categories is inherent to more clinicians receiving management training in Great Britain than in Brazil. This will favour future analysis in terms of a possible integration of both modes of governance, i.e. the clan and the hierarchy in British hospitals. It is not a surprise; as discussed in Chapter 2, section 2.3.2, British clinicians have been involved in management and being accountable for their administrative actions since the Management Budgeting in 1980s (see, for example, Llewellyn, 1999). Brazil presents a distribution of about 50% administrators and 50% clinician staff. There is a balanced distribution of respondents in terms of the different forms of organisation in hospitals in both countries.

Figure 7.3 shows the distribution of respondents' experience in terms of the time they have worked in hospitals (Q2). The distribution shows that managers in Great Britain and Brazil can be considered as having considerable experience. Great Britain shows around 85% of managers with more than 10 years experience. Brazil shows a little less, around 74%. They are concentrated in the area corresponding to more than 10 years of experience. The period of 10 to 20 years showed to be the most concentrated. This fact supports the objectives of this research, taking into account that the 12 year period preceding the realisation of this research encompasses major changes in health systems of both countries.

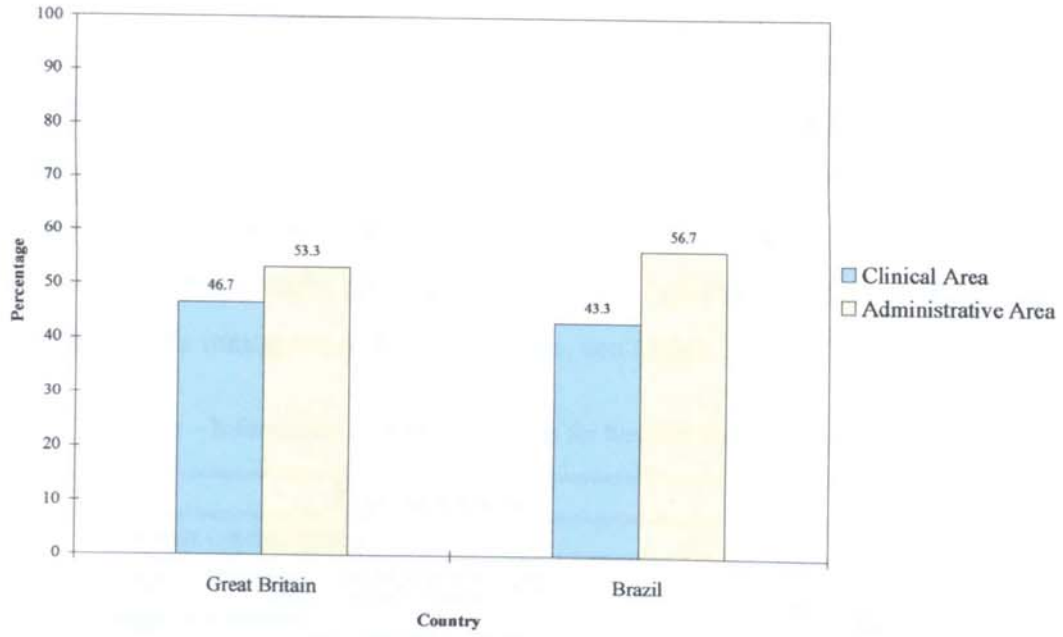
Figure 7.3 – Time working in hospitals (Q2)



[3] Inverted commas are used to detach extracts from the questionnaire.

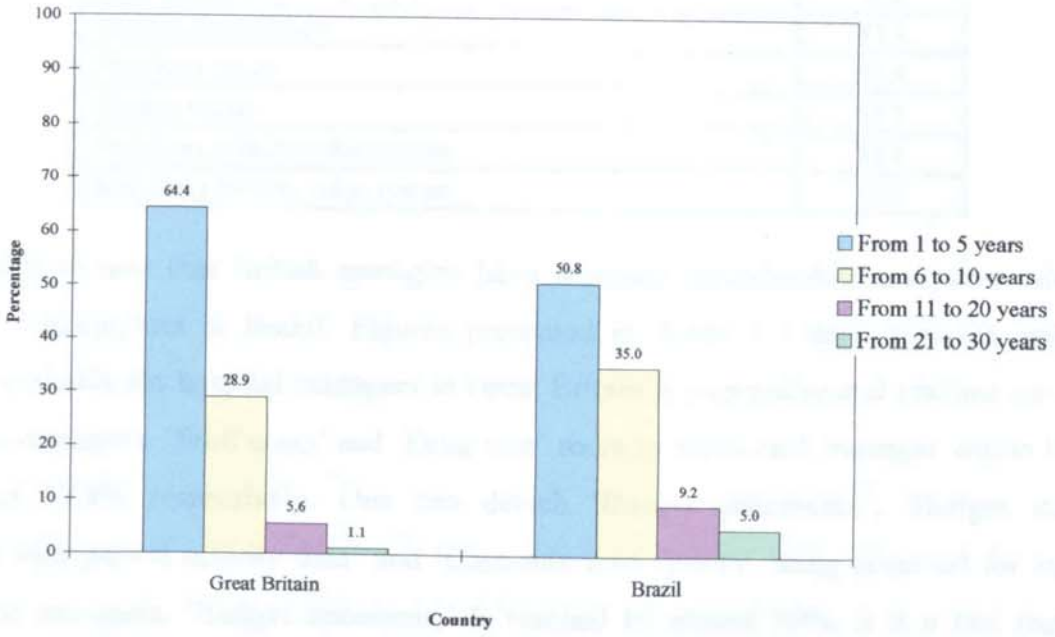
The distribution of respondents concerning the sector they were in charge of (Q3) appeared to be well balanced (Figure 7.4). Respondents in Great Britain were 46.7% responsible for clinical and 53.3% for administrative areas. In Brazil, the distribution is similar with 43.3% clinical and 56.7% administrative areas. The sample of both countries presented a balanced profile.

Figure 7.4 – Sector (area or service) in charge of (Q3)



In terms of time in charge, the majority of managers were in charge of their sectors for less than 6 years in both countries (Q4), Figure 7.5 shows 64.4% and 50.8% for Great Britain and Brazil respectively. Both countries present a similar distribution in terms of 'time in charge of the area/sector/service'. More than 85% were in charge in the period from 1 to 10 years.

Figure 7.5 – Time in charge of the area/sector/service (Q4)



Cost and resource information currently available in both countries for middle managers constitute the group of items or questions that represents the hospital structure relation specific factors. According to tables 7.2 and 7.3 the information currently available for managers can be considered extensive. Any comparison in terms of content or similarity between this information is dangerous due to elements that could bring about enormous technical problems or differences involving mechanisms and techniques applied amid hospitals in both countries as well as among countries. This research is concerned with the use of cost information or its perceived usefulness in terms of planning and control. Therefore, this does not demand the judgement of the techniques involved or any technical mechanism employed to generate cost information. Budget or case-mix was used to illustrate the idea of cost information and as a referential for planning and control, when it was made necessary during the interviews, due to their considerable diffusion among middle managers of both countries, see tables 7.2 and 7.3.

Table 7.2 – Information currently available for hospital managers: Great Britain

Cost information	%
Case-mix costing system	64.4
Budget statements – integrated with patient activity data	67.8
Budget statements	88.9
HRG (reference) costs	55.6
HRG prospective cost/price	35.6
Staff costs	95.6
Drug costs	87.8
Laboratory costing system	44.4
Radiology cost	54.4
Theatre cost	54.4
Resource information (uncosted)	
Case-mix systems	31.1
Nursing dependency	33.3
Pharmacy issues	57.8
Theatre usage	53.3
Pathology relative value system	34.4
Radiology relative value system	32.2

It is possible to note that British managers have accessed considerably more cost information than their counterparts in Brazil. Figures presented in Table 7.2 show that the information currently available for hospital managers in Great Britain is expressive and reaches the majority of hospital managers. 'Staff costs' and 'Drug cost' seem to reach each manager within hospitals, 95.6% and 87.8% respectively. One can detach 'Budget statements', 'Budget statements integrated with patient activity data' and 'Case-mix cost system' being accessed for more than 60% of the managers. 'Budget statements' is reached by almost 90%. It is a fact that British

hospitals have greater budgetary control since the Management Budgeting in the 1980s (see Chapter 2). This may explain this high figure.

DRG and case-mix accounting are used as both control mechanisms of environmental bodies and as a balance of power between administrators and physicians (see, for example, Covaleski et al., 1993). Case-mix accounting lost importance for contracting in Great Britain (see, for example, Ellwood, 2001), this may be related with the lack of effort within the clan to give away the power. Case-mix allows external comprehension and auditing of the 'transformation' processes or 'product' lines involved in hospitals (Covaleski et al., 1993). This situation explains why the NRCE started in 1998 in Great Britain (see Northcott and Llewellyn, 2001).

In Brazil, 65% of managers stated access to 'Monthly costing spreadsheet – case-mix', which represents the highest figure. In this case, managers perhaps see the opportunity for gaining certain power within Brazilian hospitals. This managerial instrument is something new, and it raises a mixture of curiosity and interest among middle managers. The curiosity is due to the fact that middle managers were not usually informed about costs of treatments. The interest is raised because managers has seen this situation as an opportunity to identify and negotiate certain issues with clinicians that were not possible before, e.g. drugs used in certain treatments. It was also observed around 50% of access of 'Drug costs' and 'Staff costs', see Table 7.3.

Table 7.3 – Information currently available for hospital managers: Brazil

Cost information	%
Monthly costing spreadsheet – case-mix (Planilhas de custo mensal)	65.0
Budgeting directives – monthly (Diretrizes orçamentárias – mensal)	46.7
Budgeting directives – annual (Diretrizes orçamentárias – anual)	30.0
Drug costs (Custo de medicamentos)	55.0
Staff costs (Custo de pessoal)	50.0
Laboratory cost (Custo laboratorial)	39.2
Radiology cost (Custo radiológico)	35.8
Theatre cost (Custo de centros cirúrgicos)	18.3
Resource information (uncosted)	
Pharmacy supplies level (Nível de estoques da farmácia)	58.3
Storeroom supplies level (Nível de estoques do almoxarifado)	63.3
Quantity of pathological exams (Quantidade de exames patológicos)	42.5
Quantity of radiological exams (Quantidade de exames radiológicos)	40.8

The profile of both samples showed a certain balance between respondents within and between countries; however, the information available and the access present considerable difference in favour of British managers. Some of the characteristics discussed will, at a later stage, be associated with other dimensions/constructs presented in this thesis.

7.2.2 Organizational, Managerial Factors

This section discusses the second research question[4] and the Organizational, Managerial factors (see Table 6.2, Chapter 6). It presents managerial roles or tasks. It also maps the perception of planning and control as managerial or organisational functional dimensions. As seen in this thesis, opportunism and bounded rationality manifest in a composition of goals and objectives such as individual, organisational, and collective. Therefore, 'goals' are considered relevant items for other dimensions/constructs. Tables 7.4.1 to 7.4.3 show the questions explored in this research in relation to this dimension/construct.

Table 7.4.1 presents the managerial roles played within hospitals (see, for example, Mintzberg, 1975). In terms of the managerial decisional roles (questions 8A, 8B, 8C and 8D or in short Q8), British managers present, as the highest value, the perception as a 'negotiator', associated with a p greater than 0.05 this supports the comparison with other managerial roles within the country but not between countries. All other values presented an acceptable p lower than 5% and are, therefore, suitable for comparisons between countries. Thus, the major role played by managers in Great Britain is the 'resource allocator' with a mean of 3.43. In turn, the lowest value, a mean of 2.68, suggested the role of 'entrepreneur'. This was expected to some extent because of the clinical auditing process hospital managers have faced in Great Britain since the introduction of the Management Budgeting initiative (see Chapter 2). This made British managers more aware of resource consumption.

Table 7.4.1 – Organizational, Managerial factors: Managerial decisional roles

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q8A	Classify function as entrepreneur	2.68 (3rd)	3.23 (2nd)	9.283	0.00
Q8B	Classify function as disturbance handler	3.29 (2nd)	3.73 (1st)	9.312	0.00
Q8C	Classify function as resource allocator	3.43 (1st)	2.40 (3rd)	27.915	0.00
Q8D	Classify function as negotiator	3.98	3.66	2.163	0.14

The biggest value presented by Brazilian managers is 'disturbance handler', with a mean of 3.73. This may be because hospitals in Brazil live in a permanent internal crisis caused mainly by governmental policy, which gradually lowers the funding of hospital services as discussed in Chapter 3. Lower salary plays its part in this problem because, for example, nurses and doctors

[4] *How do they consider their decisional roles? What can be said about their goal congruence when performing planning and control processes?*

are under paid in public hospitals compared to private sectors work. Different modes of governance should aggravate this situation.

The lowest value is presented by the role of a 'resource allocator', with a mean of 2.40. This is coherent, i.e. due to material scarcity and delays in budgeting, 'resource allocator' as a role to be played can be understood as almost non-existent in Brazil. In its place emerges the role of a 'negotiator', with a mean of 3.66 and a non-acceptable p (greater than 0.05), mainly because of the necessity to keep close contact to other hospital managers. This contact and the ability to negotiate provide material and equipment from other hospitals to cover eventual shortages. This process was explained during the interviews (see Chapter 8, section 8.2.2, 5).

In terms of planning and control as a managerial function or behaviour (Q32), there is almost no difference in Great Britain in terms of who should be responsible for this within hospitals, see Table 7.4.2. This suggests a balance between planning and control and also proposes integration between modes of governance. The difference presented slightly favours administrators, or in other words, the hierarchy. 'Planning as an administrators' task' is represented by a mean of 3.32 with an acceptable p lower than 5%. This can be considered equal to 'planning as a clinicians' task', that is represented by a mean of 3.17, with an acceptable p virtually nil. Control divided between British managers is represented by means of 3.48 and 3.16 as administrators and clinicians task respectively. There is an acceptable p virtually nil for control as an administrator task.

Table 7.4.2 – Organizational, Managerial factors: Study of planning and control responsibility

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q32A	Planning as a clinicians' task	3.17	2.53	11.17	0.00
Q32B	Planning as an administrators' task	3.32	3.81	12.69	0.00
Q32C	Control as a clinicians' task	3.16	2.84	2.786	0.10
Q32D	Control as a administrators' task	3.48	3.79	8.143	0.00
Q32E	Planning as a sector/area's task	2.84	3.01	0.466	0.50
Q32F	Control as a sector/area's task	2.80	2.81	0.000	0.99

In turn, Brazilian managers explicitly stated that planning and control should be considered administrators' tasks within hospitals. One of the reasons that justify this fact is the presence of different modes of governance within hospitals. It could mean a stronger hierarchy, however, it seems to be more related to a lack of balance between modes of governance. 'Planning as an administrators' task' shows a mean equal to 3.81 versus a mean equal to 2.53 for planning as a clinicians' task with a p virtually nil. Control showed a similar difference, with a mean of 3.79 for administrators' task and a mean of 2.84 for clinicians' task. This highlights again the major

integration between hospital managers in Great Britain, i.e. the movement of clinicians from the clan to be part of the hierarchy.

British hospital managers presented slightly different means for planning and control as being administrative (3.32 and 3.48 respectively) or clinicians' task (3.17 and 3.16 respectively). It can be seen that clinicians as managers, in Great Britain, are more involved in activities of planning and control than their counterparts in Brazil and that there is not a significant difference between these managerial functions. This suggests that the clan' members accept and exert a certain degree of vigilance that, consequently, decreases the opportunism. This fact, added to the objectives/goals congruence, supports the idea that modes of governance are more integrated. Brazilian managers placed certain emphasis on functionalism, which is shown by the high mean for 'planning as sector/area's task', however, p is not significant.

Table 7.4.3 – Organizational, Managerial factors: Study of goals present in planning and control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q33A	Similarity of goals between individuals	2.76 (3rd)	3.03 (4th)	1.657	0.20
Q33B	Similarity of goals between clinicians	2.66 (4th)	3.33 (3rd)	12.385	0.00
Q33C	Similarity of goals between administrators	3.24 (2nd)	3.46 (2nd)	2.548	0.11
Q33D	Clinicians and administrators pursue similar goals	2.51 (5th)	2.91 (5th)	2.894	0.09
Q33E	Hospital's goals are known and being observed	3.31 (1st)	3.52 (1st)	2.967	0.09

The perception of the hospital managers about the congruence of goals pursued when exercising planning and control (Q33) was also investigated. This perception was tested considering the individual, clinicians, administrators, clinician and administrators, and the hospitals' goals, see Table 7.4.3. Both British and Brazilian managers stated that hospital's goals are known and observed when hospital managers exercise planning or control as the highest mean in each country, with 3.31 and 3.52 respectively, however, p is greater than 5%, which does not support comparison between countries. It is important to highlight that overall goals are considered essential for internal consistency (see, for example, Mak, 1989). Also Simon (1976) recognises that overall goals favour behavioural congruence. This affects opportunism and bounded rationality (see Chapter 4, section 4.2.1). It is interesting to observe that managers of both countries presented almost an identical order in terms of similarity of goals. The fact that 'hospital's goals are known and being observed' as the highest mean (1st place) in both countries signals to the presence of more objectively rational decision-making.

The poorest means in Great Britain and Brazil (5th place) were computed for 'clinicians and administrators pursue similar goals', 2.51 and 2.91 respectively. This fact points to the existence

of possible differences between modes of governance when planning and controlling, i.e. the hierarchy and the clan pursue different objectives/goals (discussed in Chapter 4). Such a gap can clearly interfere with the middle management's mediation role because this is the central meaning of many of its assumptions.

This scenario should fuel the emergence of a complex rationality, i.e. subjective, individual and collectivist rather than only objectively rational decision-making. This situation is reinforced when the similarity of goals in distinct groups presents higher means than those ones presented for both groups when considered together. In other words, there is a similarity of objectives/goals in terms of group members but not between groups. In cases of lower degree of goal incongruence, the clan form of organisation should prevail (Ouchi, 1980; Bourn and Ezzamel, 1986). It is possible to observe that 'the similarity of goals between clinicians' in Great Britain is well below the 'similarity of goals between administrators'. Given contingent factors such as general government policy (discussed in Chapter 2), this suggests a better definition for the hierarchical form of organisation. Therefore, the knowledge (Tsoukas, 1995) has been shared between modes of governance, that decreases ambiguity in performance measurement. Brazilian managers present a similar profile, however, given contingent factors such as (lack of) general government policy (discussed in Chapter 3), this suggests that opportunism and ambiguity in performance measurement are still high.

7.2.3 Cost Information Specific Factors

This section discusses the third research question[5] and the Cost Information specific factors (see Table 6.2, Chapter 6). Tables 7.5.1 and 7.5.2 show the questions explored in this research relatively to this dimension/construct.

Table 7.5.1 – Cost Information specific factors: Cost information access

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q9	Accessibility	3.81	2.78	22.632	0.00
Q10A	Access by computer	2.17	2.14	0.088	0.77
Q10B	Access by reports	2.46	2.78	13.778	0.00
Q10C	Access by meetings	2.78	2.82	0.894	0.34
Q10D	Access by talking to people	3.40	3.81	3.506	0.06

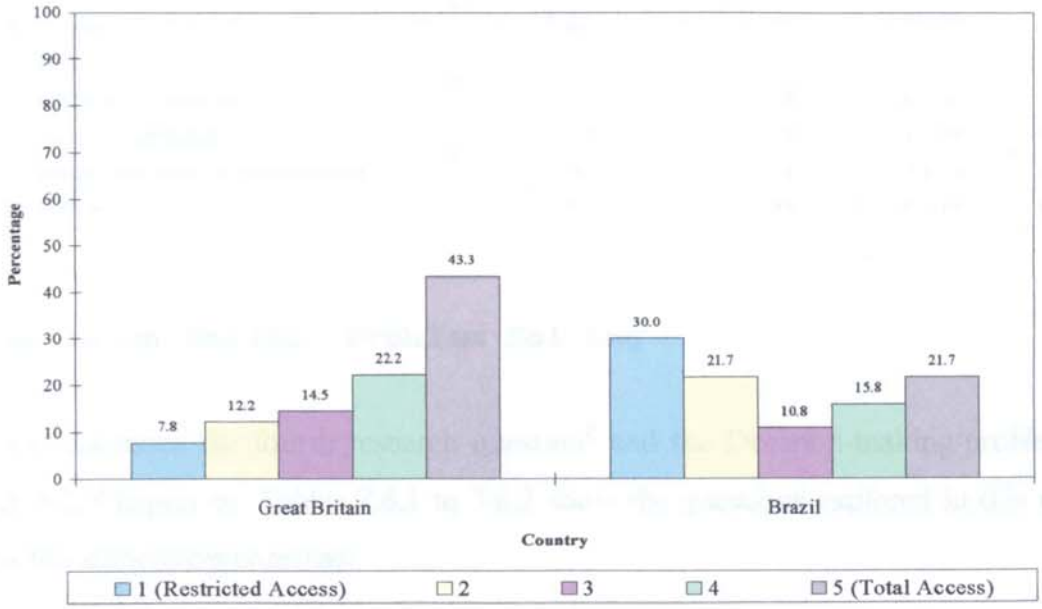
In terms of access to information about costs and resource consumption in treatments or clinical specialities (Q9) it can be seen that British managers, with a mean of 3.81, are well ahead of their

[5] *Do they consider the available cost information relevant? To what extent? How accessible is it?*

counterparts in Brazil, with a mean of 2.78. There is a suitable p, lower than 5%, for comparisons between countries (see Table 7.5.1).

At the same time, according to Figure 7.6, more than 65% of British managers have a considerable level of access to information about cost. In terms of Brazilian managers the percentage is considerably lower, 37.5%. Taken together with the data contained in tables 7.2 and 7.3 discussed in the section 7.2.1 it is possible to assert that British managers have superior access to cost information than their Brazilian counterparts. Cost information should reduce uncertainty (Choo, 1996). Extensive cost information availability associated with high accessibility improves the decision-making process. Therefore, British managers enjoy a privileged position to reduce or eliminate opportunism and to encourage the programmed decision-making and structured problem solving.

Figure 7.6 – Access to information about cost and resource consumption (Q9)



Note: $p < 0{,}001$ and Cramer's $V = 0{,}341$

In terms of how managers access cost information (Q10), it can be said that informal media presented highest values in Great Britain, 3.40 for 'talking to people' and 2.78 for 'meetings', and Brazil, 3.81 and 2.82 respectively (see Table 7.5.1). This confirms what Mintzberg (1975) posed about managers preferring informal channels of communication rather than formal ones. However, his work was done with executives of companies. The scale for this item varies from less than monthly to daily, which means that access through the computer is done less than weekly in both countries.

Characteristics of information (Q12) proved to be strong in both countries (see Table 7.5.2). 'Relevance', that is considered a stronger intrinsic characteristic of information (see, for example, Schweikart, 1986), presented high values in Great Britain and Brazil, a mean of 3.44 and 3.45 respectively, with an unsuitable p greater than 5%. This does not prevent it being stated that this mean was the highest presented in Great Britain and second highest in Brazil just behind 'easy to understand' with a mean of 3.53.

In general terms, cost information has acceptable characteristics in both countries with almost all means above 3 in Great Britain and all of them above 3 in Brazil. This supports the fact that managers of both countries have received information about costs with a high degree of satisfactory quality.

Table 7.5.2 – Cost Information specific factors: Cost information characteristics

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q12A	Reliability	2.99	3.01	0.099	0.75
Q12B	Relevance	3.44	3.45	0.079	0.78
Q12C	Clarity	3.11	3.16	0.151	0.70
Q12D	Simplicity to consult	3.10	3.18	0.186	0.67
Q12E	Easy to understand	3.38	3.53	1.279	0.26
Q12F	Volume (amount of information)	2.92	3.14	2.018	0.16
Q12G	Precision	3.01	3.03	0.116	0.73

7.2.4 Decision-Making, Problem Solving

This section discusses the fourth research question[6] and the Decision-making/problem solving (see Table 6.2, Chapter 6). Tables 7.6.1 to 7.6.3 show the questions explored in this research in relation to this dimension/construct.

In terms of hierarchical influence on non-programmed decision-making, Table 7.6.1 shows that British managers have more 'autonomy' to decide about unstructured or critical problems than their counterparts in Brazil (Q21) - mean of 3.70 and 2.64 respectively with an acceptable p lower than 5%. This can be considered as being a result of the decentralised hospital's structure in Great Britain. British hospitals present a structure that suggests or can be associated to the M-form (see Thompson et al., 1991; Emmanuel et al., 1993), which simulates the market form of organisation within a hierarchical structure (Ouchi, 1980). It can be said that this form of

[6] *Are they effectively involved in decision-making and problem solving, in terms of non-programmed decisions and problems? What is the hierarchical influence on the non-programmed decision-making?*

organisation started with management budgeting. It is coherent with a simulation of competition for resources and improvement in performance. In this case, it decreases the ambiguity in performance measurements. It is interesting to notice that the three modes of governance could be identified and found in British hospitals.

Brazilian managers seem to have no autonomy in unstructured decision making. This characteristic presents a mean lower than all the others but consulting computer systems. Brazilian managers are shown to be attached to the hierarchical structure because of the item 'advice from superiors' presented the highest mean, 3.81. Hierarchies are appropriate for a moderate degree of goal incongruence and also for a moderate degree of ambiguity in performance measurement (as discussed in Chapter 5). Given the contingent factors, such as governmental policies and environmental uncertainty, this definitely is not the current situation of the Brazilian hospitals. Lack of process standardisation and, consequently, a high degree of ambiguity in performance measurement is a common characteristic of the Brazilian public hospitals. Therefore, these circumstances show that the hierarchy as mode of governance is not coherent. In this case a higher degree of opportunism emerges and, at the same time, the modes of governance face difficulties to interact. This situation can be purposively generated, seeking to keep the clinical freedom and, consequently, advantages and opportunist behaviour.

Table 7.6.1 – Decision-making and problem solving: Hierarchical characteristics

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q21A	Autonomy for decision-making	3.70	2.64	29.393	0.00
Q21B	Advice from superiors for decision-making	2.98	3.81	26.984	0.00
Q21C	Advice from subordinates for decision-making	3.33	3.65	4.818	0.03
Q21D	Manuals consulting for decision-making	2.64	3.17	7.552	0.01
Q21E	Computer systems consulting for decision-making	2.38	2.13	3.673	0.06

Overall performance was positively related to infrequent interactions with superiors (see, for example, Merchant, 1981). Even though this was stated for companies, it supports British managers. They presented the mean of the characteristic 'advice from superiors' as being one of the lowest ones, i.e. 2.98 or less than 'advice from subordinates'. This is coherent because the greater the autonomy on decision making and problem solving, the lower is the looking for 'advice from superiors', meaning decentralization and giving indicatives of a more co-operative network mode and of an integration between the clan and the hierarchy (discussed in Chapter 2.2).

Putting together 'autonomy for decision making' and 'advice from subordinates' as highest values, British managers support the idea of organisational fragmentation, like islands being formed and ruled within the organisation. This is acceptable in terms that British managers are coping with non-programmed decision-making and are able to get involved with complex rationality. In turn, Brazilian managers, in this specific situation, seem to follow the rules being prescribed by the objective rationalism and hierarchy, however, this appears to be an ostensible or artificial situation given the contingent factors.

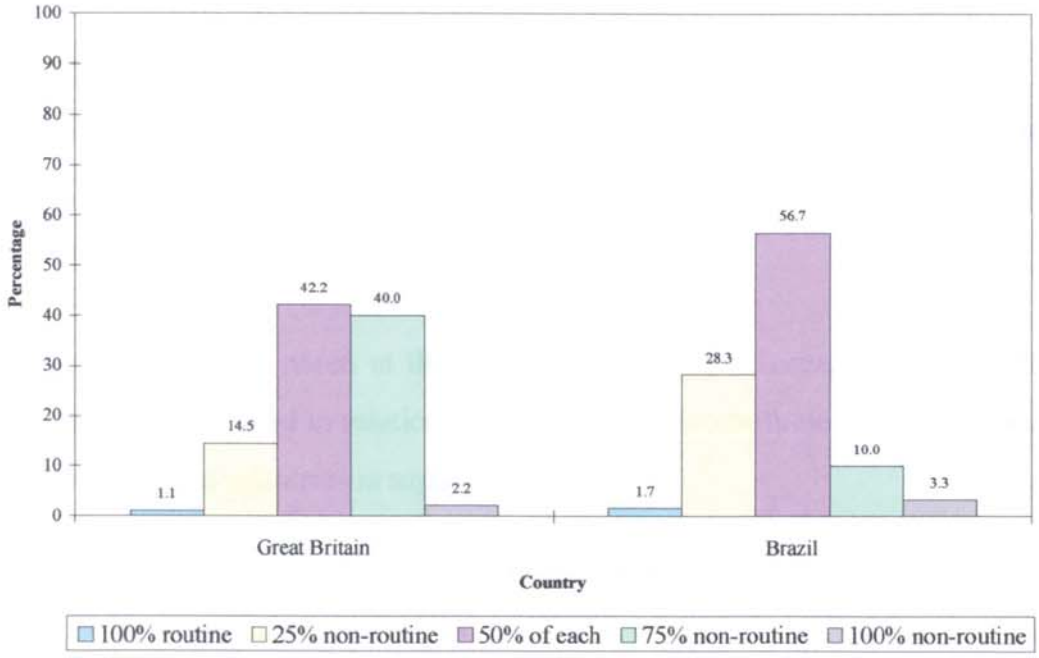
Table 7.6.2 – Decision-making and problem solving: Relation between programmed and non-programmed decision-making

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q22	Proportion between programmed (routine) and non-programmed (non-routine)	3.28	2.85	18.026	0.00

Managers of both countries are involved in decision-making and problem solving (Q22). The proportion between 'programmed or routine' and 'non-programmed or non-routine' decision-making (see, for example, Simon, 1976) shows that British managers represent what the theory has proposed, i.e. managers in the multidivisional environment (internal and external) of hospitals are expected to take more non-programmed decisions (see, for example, Emmanuel et al., 1993), see Table 7.6.2. The Brazilian managers present a mean slightly higher than 2.5, which would represent 50% routine and 50% non-routine decision-making. As can be seen in Table 7.6.2, British managers presented a mean of 3.28 and their counterparts in Brazil, 2.85, with an acceptable p lower than 0.05 favouring comparison between countries. Non-programmed decision-making and unstructured problems can be related with a higher degree of ambiguity in services, the presence of narrative knowledge, the incompleteness of task instrumentality, the imperfection in the knowledge of the 'transformation' process and the 'asset specifications' within hospitals. This certainly propels the occurrence of higher degrees of ambiguity in performance measurement. When this is associated with goal incongruence, even more opportunistic behaviour can be expected. Therefore, hospitals should adopt integrated modes of governance to cope with this situation. It will be discussed ahead in this thesis that the clan has been integrated to the hierarchy in British hospitals. There is not a similar process occurring in Brazilian hospitals.

Figure 7.7 shows that British managers have a balanced group of non-routine decisions in between 50 and 75%. It is important to highlight that 40% of the British managers acknowledged that 75% of their decision-making is non-programmed. Brazilian managers present a concentration in between 25 and 50%.

Figure 7.7 - Proportion between routine and non-routine decisions (Q22)



Note: $p < 0{,}001$ and Cramer's $V = 0{,}360$

Table 7.6.3 introduces the degree of structured decision-making/problems solving in planning and control processes (Q24 and Q30). This will be discussed in the sections 7.2.6 Managerial planning and 7.2.7 Managerial control. This is coherent with what was discussed, i.e. decision-making, planning and control are closely related processes.

Table 7.6.3 – Decision-making and problem solving: Degree of structured decision-making and phase theorem – Managerial planning and Managerial control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q24A	Control of supplies/consumables	3.52	3.73	3.012	0.08
Q24B	Control of human resources	3.59	3.88	5.835	0.02
Q24C	Control of equipment	3.49	3.77	6.095	0.01
Q30A	Planning of supplies/consumables	3.66	3.76	1.8	0.18
Q30B	Planning of human resources	3.78	3.83	0.875	0.35
Q30C	Planning of equipment	3.57	3.58	0.189	0.66

7.2.5 Cost Information Perceived Usefulness and Attitudes

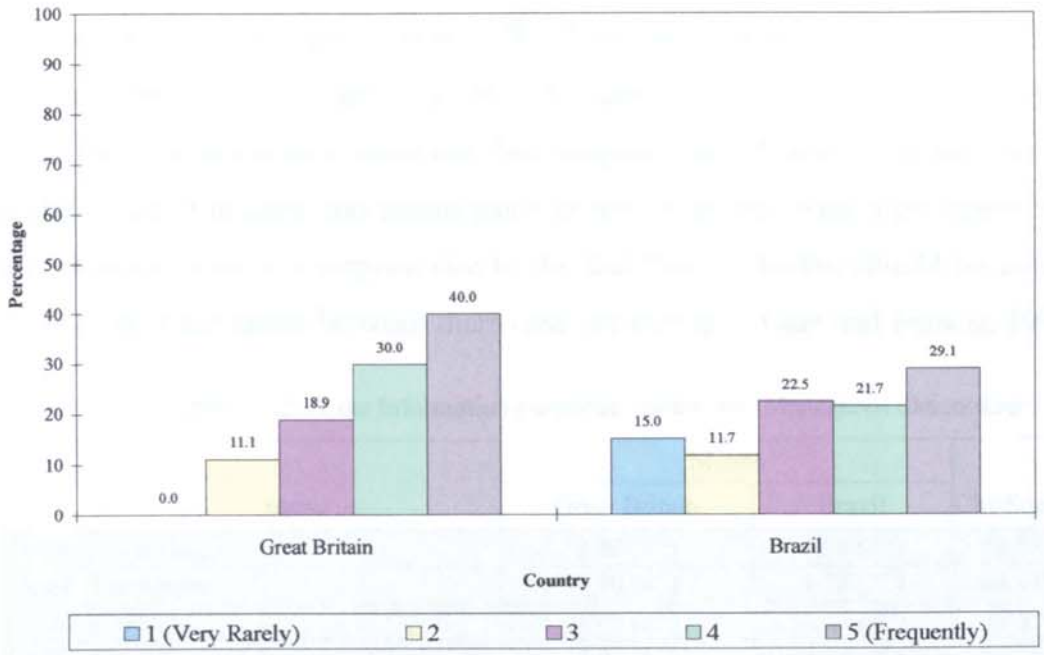
This section discusses the fifth research question[7] and Cost information usefulness and attitudes (see Table 6.2, Chapter 6). Tables 7.7.1 to 7.7.10 show the questions explored in this research in relation to this dimension/construct. It is important to note that the discussion of the fifth question in relation to the use of cost information for planning (Q29) and control (Q23) starts in

this section and is completed in sections 7.2.6 Managerial Planning and 7.2.7 Managerial Control. This does not affect the final result and makes the presentation richer.

The lack of studies about the use of cost information in planning and control with respect to public hospitals impedes any other comparison or assessment considering empirical data. As stated in Chapter 1 and discussed in Chapter 6, one of the objectives of this thesis is to generate initial material for future researchers.

An important fact to be noted at the beginning is that p is acceptable and virtually nil for all items/variables considered in relation to cost information usefulness and attitudes. Therefore, the comparison between countries is supported.

Figure 7.8 - Involvement of the cost information in decision-making and problem solving (Q13)



Note: p = 0,002 and Cramer's V = 0,285

In terms of 'involvement of cost information in decision-making/problem solving process' (Q13) one can note that British managers tend to be more concrete users than their counterparts in Brazil, see Figure 7.8. The percentage of British managers using cost information with reasonable frequency in decision-making and problem solving processes are about 70% whereas Brazilian ones are just 50.8%. This supports the fact that British managers are more concerned about cost information and the role it plays in decision-making and problem solving. The use of cost information means uncertainty reduction and supports resource allocation. It is important to

[7] *Do they use cost information when planning and controlling in terms of human resources, supplies and equipment? To what extent? Do they consider cost information useful for benchmarking and improving*

observe that 15% of Brazilian managers use cost information 'very rarely' in the decision-making/problem solving processes. Table 7.7.1 shows the means of involvement of cost information in decision-making assigned by managers of both countries. The means can be considered high in both countries.

Table 7.7.1 – Cost Information perceived usefulness: Decision-making/problem solving

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q13	In decision making/problem solving process	3.99	3.88	8.647	0.00

When testing the usefulness of cost information in terms of certain managerial dimensions (Q14), both countries assumed the same order regarding the applicability of cost information. 'Planning' is posed first and it is followed by 'control' with highest scores, see Table 7.7.2. It is not surprising that planning and control were ranked first. According to the literature, the multidivisional structure in a complex environment demands investment in both managerial dimensions (see, for example, Ouchi, 1980; Emmanuel et al., 1993; Otley, 1994). In British organisations this can be explained by the market mechanisms involved. As said before, hospitals have experienced a structure that suggests the M-form structure since management budgeting. Ranked in third and fourth place in both countries with high means were prediction and surveillance. This is a surprise due to the fact that prediction should be closer to planning given the close relationship between them (see, for example, Dant and Francis, 1998).

Table 7.7.2 – Cost Information perceived usefulness: Managerial dimensions

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q14A	Surveillance	3.80 (4^{th})	4.68 (4^{th})	58.082	0.00
Q14B	Prediction	3.90 (3^{rd})	4.71 (3^{rd})	63.917	0.00
Q14C	Control	4.00 (2^{nd})	4.76 (2^{nd})	58.554	0.00
Q14D	Planning	4.01 (1^{st})	4.88 (1^{st})	81.386	0.00

The extent to which cost information facilitates optimal managerial procedures was investigated (Q15), see Table 7.7.3. British managers presented the facilitation of 'resource control' as the highest mean, i.e. 3.93. Placed second was that assured cost information facilitates 'adequate or optimal decisions', with a mean of 3.84. They were followed by 'adequate planning' with a mean of 3.70, problem solving with a mean of 3.50, and 'uncertainty reduction' with a mean of 3.19. The variable 'uncertainty reduction' (Q15E) that establishes a connection between organization and environment was ranked in last place in this country (see, for example, Mak, 1989). This could suggest a weak link between the use of cost information for planning and

control and the environment (internal and external). Mak (1989) related perceived environmental uncertainty and internal systems of planning and control in manufacturing companies. He expected that the higher the environmental uncertainty the higher the sophistication of top control processes and therefore the perceived usefulness of information would be higher. This author found, surprisingly, that companies with greater environmental uncertainty employed more sophisticated forms of basic operational control and not of management control or strategic planning. In this case usefulness of information did not interfere, as expected, with the environmental uncertainty. The same thing happened in hospitals. Hospitals, mainly the Brazilian ones, are inserted in a highly complex environment and demand an elevated degree of sophistication of control processes, therefore, it would be expected a higher mean for cost information usefulness in terms of uncertainty reduction. This did not happen for both countries. Resource control was well positioned, reinforcing the presence of objective rationalism in planning and control.

Table 7.7.3 – Cost Information perceived usefulness: Managerial procedures

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q15A	Adequate decisions	3.84 (2nd)	4.63 (3rd)	54.577	0.00
Q15B	Adequate planning	3.70 (3rd)	4.74 (1st)	73.558	0.00
Q15C	Problem solving	3.50 (4th)	4.33 (5th)	35.281	0.00
Q15D	Resource control	3.93 (1st)	4.68 (2nd)	47.817	0.00
Q15E	Uncertainty reduction	3.19 (5th)	4.49 (4th)	74.229	0.00

Brazilian managers also presented high means, see Table 7.7.3. Placed first is that cost information 'facilitates adequate planning' with a mean of 4.74. This is followed by 'resource control' with a mean of 4.68. Ranking next is that cost information facilitates 'adequate or optimal decisions' with a mean of 4.63, 'uncertainty reduction' with a mean of 4.49, and finally 'problem solving' with a mean of 4.33.

Table 7.7.4 – Cost Information perceived usefulness: Control

Items		Means		Chi-Square	P
		Great Britain	Brazil		
Q16A	Resource consumption	3.76 (1st)	4.59 (1st)	51.56	0.00
Q16B	Clinical activity	3.10 (3rd)	4.46 (3rd)	71.276	0.00
Q16C	Administrative activity	3.22 (2nd)	4.55 (2nd)	86.866	0.00

When asked about the usefulness of cost information for control/surveillance (Q16), British and Brazilian managers gave the same order of importance, see Table 7.7.4. Placed first was the usefulness 'for control on resource consumption' with a mean of 3.76 and 4.59 for British and Brazilian managers respectively. Placed second was its usefulness for control/surveillance of

'administrative activity' with mean of 3.22 for British managers and 4.55 for Brazilian managers. In third place came 'control on clinical activity' with mean of 3.22 for British managers and 4.55 for Brazilian managers. These means favour a positive analysis of the usefulness of cost information for control. In this case the control of 'clinical activity', which, as discussed earlier, involves clan members, is ranked third in both countries. The form of knowledge involved with this activity can be considered, to some extent, responsible for this result (see, for example, Lapsley, 1993; Tsoukas, 1995). Tsoukas (1995), for example, supports that the knowledge involved in clinical activities has a narrative part due to practice, for example. This means that part of the knowledge is descriptive, as an experience, and the situations are shared and dispersed within the group or community, which is able to understand its meaning or content. However, the knowledge involved in managerial activities is more propositional, i.e. documented and systematised. Therefore, it sounds adequate that planning and control of clinical activity are the last placed given the above characteristics. British hospitals have involved clan members with the hierarchy, this mitigates barriers posed by the narrative form of knowledge for example.

Table 7.7.5 – Cost Information perceived usefulness: Benchmarking

Items		Means		Chi-Square	P
		Great Britain	Brazil		
Q17A	Resource consumption	3.61 (1st)	4.43 (1st)	37.07	0.00
Q17B	Clinical activity	3.06 (3rd)	4.40 (3rd)	64.113	0.00
Q17C	Administrative activity	3.11 (2nd)	4.42 (2nd)	68.057	0.00

The same phenomenon occurred in terms of the consideration of the usefulness of cost information for benchmarking (Q17). British and Brazilian managers established the same order, i.e. 'benchmarking on resource consumption' was ranked first in both countries, with a mean of 3.61 and 4.43 for British and Brazilian managers respectively, see Table 7.7.5. 'Benchmarking administrative activity' was placed in second, with the mean of 3.11 for British managers and 4.42 for Brazilian managers. Finally, 'benchmarking clinical activity' was placed in third, with mean of 3.06 and 4.40 for British and Brazilian managers naturally. This reinforces the preceding analysis and gives some empirical evidence to the influence of differences in knowledge pressuring planning and control, therefore, this is not a surprise. The hierarchy, due to the presence of more propositional knowledge, can be more tested and have its degree of ambiguity in performance measurement reduced. The same does not occur in terms of benchmarking of clinical activities because the fraction based on narrative knowledge is considered that only clan members are able to understand it. Therefore, unless the clan members get involved with the hierarchical organisation and, consequently, the line of command, the

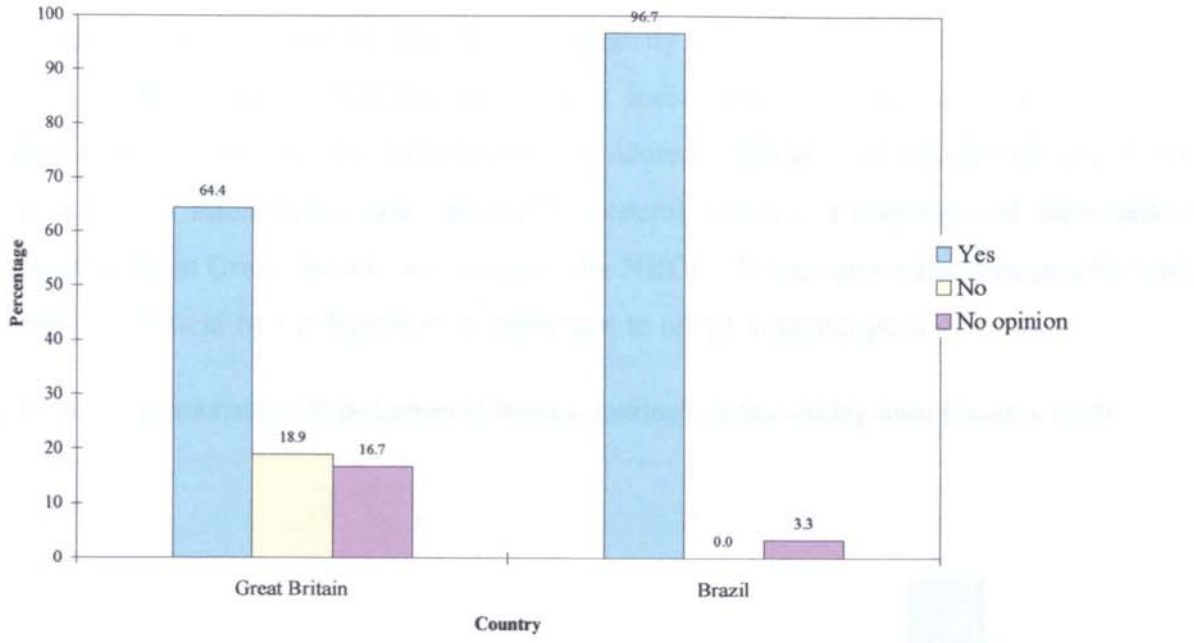
middle management mediation role involving clinical activities should be considered irrelevant or unproductive.

Table 7.7.6 – Cost Information perceived usefulness: Reduction of items to control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q18	Cost information reduces elements to control	3.13	4.18	48.036	0.00

Table 7.7.6 (Q18) and Figure 7.9 (Q19) shows the extent to which computerised information systems reduce the number of controllable elements and whether a computerised cost information system makes it easier to control activities performed. In terms of the former, British and Brazilian managers showed that this is true with a mean of 3.13 in Great Britain and 4.18 in Brazil. Regarding the latter, as shown in Figure 7.9, both British and Brazilian managers agree positively. However, it must to be highlighted that 18.9% of British managers denied the usefulness of computerised cost information for control activities whilst in Brazil it was 0%.

Figure 7.9 - The use of a computerised cost information system can make it easier to control activities performed (Q19)



Question 20 (Table 7.7.7) investigated the extent to which cost information improves managerial decision-making or problem solving when planning. Managers of both countries presented very significant agreement to this fact. The use of cost information as an element that improves decision-making was largely expected. It must be said that British managers presented a mean lower than Brazilian managers. British managers presented a high mean (3.97), however, it is lower that that presented by Brazilian managers (4.71). This can be explained, to some extent, by British managers' experience and the understanding that cost information is not sufficient *per se* for the exercise of the middle management mediation role. They should use other types of

information rather than only cost information in the decision-making/problem solving processes as anticipated by Brignal (1997). The causes are also related to non-programmed decisions. In this case opportunism and complex rationality emerge and are considered.

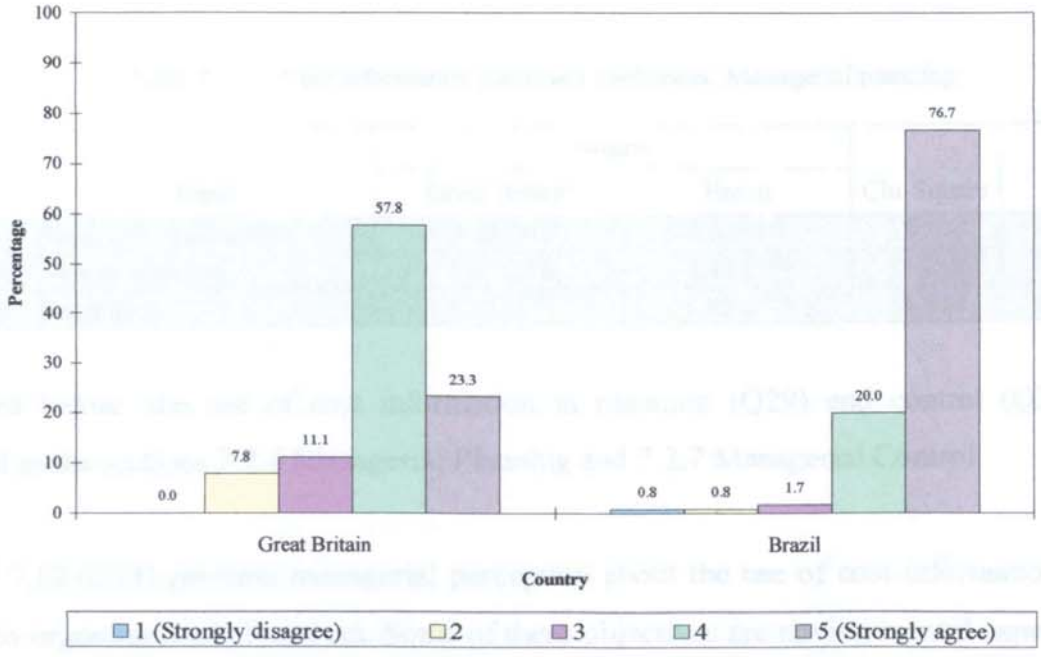
Brazilian managers place high emphasis on the use of cost information for decision-making/problem solving processes. This should be considered, to some extent, inappropriate given the contingent factors such as environmental complexity and the occurrence of non-programmed decisions. However, this inappropriateness can be considered convenient for the forms of organisation in Brazilian hospitals, i.e. seeking to keep the level of opportunism and clinical freedom, the modes of governance would rather a more "ritualistic than rationalistic" (Bourn and Ezzamel, 1986, p. 203) form of control.

Table 7.7.7 – Cost Information perceived usefulness: Extent of cost information use for decision-making/problem solving

	Items	Means		Chi-Square	P
		Great Britain	Brazil		
Q20	Cost information improving decision making, problem solving when planning	3.97	4.71	58.45	0.00

Not surprisingly, Figure 7.10 shows that the vast majority of managers, representing more than 80%, in both countries agreed that the use of cost information can improve planning. This massive support for the use of cost information, considered together with the already discussed characteristics of cost information, adds support to general policies of keeping cost information available nationwide in Great Britain, for example the NRCE. At the same time, this justifies the need for more investment by the Brazilian government to adopt a similar policy.

Figure 7.10 - Cost information improvement of decision making/problem solving when planning (Q20)



Note: $p < 0{,}001$ and Cramer's $V = 0{,}547$

After this, the use of cost information when planning and controlling in relation to human resources, supplies and equipment was studied (Q23 and Q29). Table 7.7.8 presents the test of the extent to which cost information is an element considered for managerial control (Q23). The cost information is used in both countries more for control of 'supplies/consumables'. British managers placed 'human resources' second and 'equipment' third. Brazilian managers considered both equally. It is not totally unexpected in both countries.

Table 7.7.8 – Cost Information perceived usefulness: Managerial control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q23A	Supplies/consumables	3.91 (1st)	4.63 (1st)	30.456	0.00
Q23B	Human resources	3.68 (2nd)	4.50 (2nd)	27.897	0.00
Q23C	Equipment	3.58 (3rd)	4.50 (2nd)	34.258	0.00

The consideration of cost information as an element of managerial planning (Q29) presented the same order in both countries, as shown in Table 7.7.9. The highest mean is for managerial planning of 'supplies/consumables'. It was not a surprise. The use of cost information for planning and control supplies/consumables placed first emphasises objective rationality, i.e. an elementary use of cost information. Managerial planning of 'equipment' and 'human resources' were ranked second and third respectively. This order, reflecting certain preferences, is no surprise. Despite the importance of planning 'human resources', it must be said that cost information plays an important role. However there are other strong variables involved that are not discussed in this research. In turn, in terms of managerial planning of 'supplies/consumables' and 'equipment', cost information would play the most important role.

Table 7.7.9 – Cost Information perceived usefulness: Managerial planning

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q29A	Supplies/consumables	3.93 (1st)	4.58 (1st)	38.244	0.00
Q29B	Human resources	3.63 (3rd)	4.43 (3rd)	33.358	0.00
Q29C	Equipment	3.73 (2nd)	4.48 (2nd)	35.949	0.00

As posed before, the use of cost information in planning (Q29) and control (Q23) will be analysed in the sections 7.2.6 Managerial Planning and 7.2.7 Managerial Control.

Table 7.7.10 (Q34) presents managerial perception about the use of cost information for items related to organizational objectives. Some of these objectives are environmental expectations for

control cost and encourage planning as posed by Covaleski et al., 1993. It is possible to more clearly identify the presence of rationality and complex rationality to reach some of these objectives as well (discussed in Chapter 5). The use of cost information for managerial activities such as 'cost reduction' or to 'reduce resource consumption' involves standardised and structured forms of control, such as routine and expert (Hofstede, 1981). This is due to the presence of objectives/goals congruence, completeness of knowledge about the 'transformation' process and a smaller degree of change of the predictive model. In this case, more programmed decision-making and objective rationality take place and, consequently, opportunistic behaviour is strongly restrained. However, a more complex and less deterministic model is demanded, for example, in terms of the benchmarking of clinical activities or the provision of clinical activity progress. These activities involve some narrative knowledge and, consequently, the clan members. Therefore, a complex rationality (more individual, subjective or collectivist) can be detected in this case.

Table 7.7.10 – Cost Information perceived usefulness: Planning and control objectives

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q34A	Benchmarking of clinical activities	4.00	4.45	17.682	0.00
Q34B	Clinical activity progress	3.71	4.36	25.249	0.00
Q34C	Improve clinical treatments	3.42	4.45	50.353	0.00
Q34D	Reduce resource consumption	3.88	4.51	39.814	0.00
Q34E	Cost reduction	3.92	4.64	56.6	0.00
Q34F	Provide training clinic professionals	3.22	4.34	49.103	0.00
Q34G	Provide training administrative professionals	3.52	4.43	47.927	0.00

Table 7.8 shows that British managers assigned the highest score to the item, which presents the use of cost information in planning and control capable of providing 'benchmarking of clinical activities'. This supports the non-programmed decision-making British managers are involved in. It can be observed, as stated earlier in Chapter 2, that the Labour policy has introduced a competition based on comparison of costs between hospitals and a benchmarking process. Therefore, cost information has served and has been contingent on external variables. This current position reflects this. This empirical evidence will be tested in the next chapter, mainly for managers with a clinical background. This suggests that the message from the British Government has been understood and is borne in mind by managers. This emerged from the imposed managerialism. It can be said that there is evidence that the British Government has obtained what it has intended to and, at the same time, it has kept a respectful coherence with hospital managers thought and practices. Going further, it is possible to understand and identify that clan members are getting involved with the bureaucratic planning and control processes.

Table 7.8 – Cost information perceived usefulness in planning and control (Q34)

Items		Great Britain	Brazil
Q34A	Benchmarking of clinical activities	1st	3rd
Q34B	Clinical activity progress	4th	6th
Q34C	Improve clinical treatments	6th	4th
Q34D	Reduce resource consumption	3rd	2nd
Q34E	Cost reduction	2nd	1st
Q34F	Provide training clinic professionals	7th	7th
Q34G	Provide training administrative professionals	5th	5th

Note: The order given to items is based on the means showed in the Table 7.7.10.

According to Table 7.8, British managers scored 'cost reduction' as the second highest item and ranked 'reduce resource consumption' third, which means that pure programmed decision-making and objective rationality came second. Brazilian managers, in contrast, ranked 'cost reduction' as the first highest item and 'reduce resource consumption' as second. Despite being commonsensical use of cost information, 'cost reduction' and 'reduce resource consumption' can be considered as mechanical and functionalist supporting an objective rationalist point of view. Brazilian managers ranked 'benchmarking of clinical activities' third. It cannot be considered a complete surprise because Brazilian managers present high means for the use of cost information in general circumstances.

Because of the degree of complexity involved, one can assert that benchmarking is an evolved way of using cost information. Regarding this research, it can be said that British managers have an enriched perspective, about the use of cost information because 'benchmarking' was ranked first. External and internal benchmarking can be considered a more complex managerial technology. Literature (see, for example, Emmanuel et al., 1993) has explained that, due to the growing environmental complexity, organisational systems should gain complexity as well and this is supported by this research.

The other two items 'clinical activity progress' and 'improve clinical treatments' were presented with alternating scores in Great Britain and Brazil. British managers ranked 'clinical activity progress' fourth and 'improve clinical treatments' sixth; Brazilian managers vice-versa. It is important and coherent to note that, to some extent, cost information can contribute to clinical treatments. This can curb opportunistic behaviour and decrease the degree of ambiguity in performance measurement, what favours the hierarchical form of organisation. This is the expectation of the British Government. In terms of Brazil, it can be said that, managers are aware of this by other means, because there is no governmental policy emphasising the use of cost

information in association with clinical activities. Also, according to discussed findings, the forms of organisation in Brazilian hospitals are not integrated and, consequently, opportunistic behaviour thrives.

Table 7.8 shows that managers of both countries ranked fifth and seventh, therefore at the bottom, 'training administrative professionals' and 'training clinic professionals' respectively. The importance given to those items is lower than the importance given to the others reflecting certain incoherence with the increase of complexity of internal systems. An explanation for such incoherence can be that, even though ranked lowest, they still have high means, i.e. over three in both countries.

7.2.6 Managerial Planning

This section discusses the sixth research question[8] and Managerial planning (see Table 6.2, Chapter 6). Tables 7.9.1 to 7.9.5 show the items explored in this research in relation to this dimension/construct.

Table 7.9.1 – Managerial Planning characteristics: Dedication to the planning process

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q6A	Time spent	2.53	2.68	2.264	0.13
Q7A	Judgement of time spent	2.76	3.36	12.939	0.00

In terms of whether managers plan, according to Table 7.9.1, British managers attributed a mean of 2.53 to the item 'time spent' (Q6A) doing it. Their counterparts in Brazil attributed a mean of 2.68 to it. A comparison between countries is discouraged because of the unacceptable p greater 5%. Managers of both countries plan once they dedicate time to it. They involve goals, as discussed in the section 7.2.2 – Table 7.7 and use different predictive models as can be seen on Table 7.9.2, which is in accordance with the planning definition (see, for example, Dant and Francis, 1998).

The extent of the dedication to planning presented means slightly superior to the central point (2.5 in a scale from 1 to 5), which implies that managers in both countries spend around 50% of their managerial time with planning, see Table 7.9.1. It is not possible to confirm whether this is

[8] *Do they plan effectively? To what extent do they do it? Do they use different predictive models? Do they consider cost information useful to support planning processes?*

enough for public hospitals due to the lack of previous research involving this subject to support a balanced assessment. Table 7.9.3 and 7.9.4 also presents and support discussion about the extent of the planning process in relation to the studied areas: supplies, human resources and equipment.

The item 'judgement of time spent' (Q7A) presented means of 2.76 and 3.36 for British and Brazilian managers respectively, with an acceptable p lower than 0.05. This means that managers of both countries, in general, consider that the percentage of managerial time they dedicate to the planning activity is sufficient or adequate. Brazilian managers are more satisfied with the time they spend planning.

The literature review has shown that uncertainty reduction, discussed in the section 7.2.5, and use of different predictive models link organisational planning and control with the environment (see, for example, Rayburn and Rayburn, 1991; Mak, 1999; Geiger, 1999). A continuous change in the predictive model should indicate a major environmental change and differences in the internal structure.

The use of different predictive models is expected in case of complex environments. The higher degree of use of different predictive models is patent in Brazilian hospitals, i.e. 3.46. British managers presented a lower mean, i.e. 2.71, see Table 7.9.2. British managers seem to have an environment more predictable than Brazilian managers. The difference in means is considerable. The higher the use of predictive models reflects the higher the presence of opportunistic behaviour and ambiguity in decision-making processes will be. This also affects the degree of goals congruence. This interferes in the knowledge and forms of control as well. In Brazilian hospitals this fact causes excessive clinical freedom, what strengthens the clan. Comparatively, British managers experience lesser opportunism and lower clinical freedom.

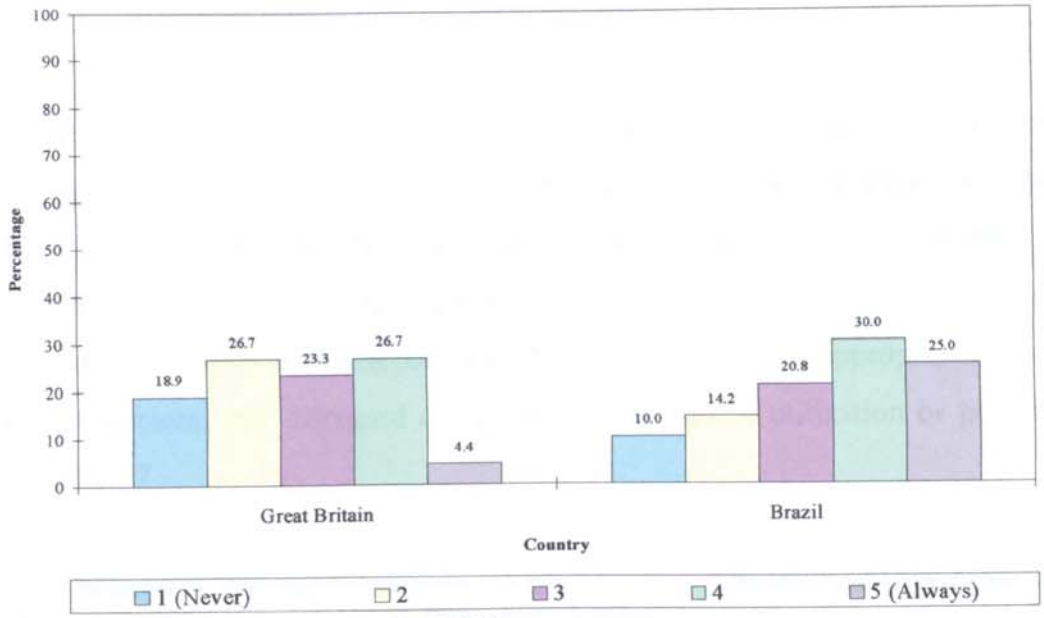
Table 7.9.2 – Managerial Planning characteristics: Use of different predictive models

	Items	Means		Chi-Square	p
		Great Britain	Brazil		
Q28	Use of predictive models	2.71	3.46	17.656	0.00

According to the Figure 7.11, more than 80% of the British and Brazilian managers indicated to have used different 'predictive models' when planning (Q28). The use of different predictive models taken together with different objectives can be considered as basic requirements of more complex rationality (objective, subjective, individual or collectivist) and pragmatism in planning

and control. This observation is compatible with the studied environment due to the presence of both systematic knowledge on the one hand and contingency and incompleteness of knowledge in the other. This reflects the division between knowledge and action roles within hospitals represented by medical and administrative areas respectively or by clan and hierarchy. This is quite visible in Brazilian hospitals.

Figure 7.11 – Use of different predictive models (any instrument to help anticipation) when planning (Q28)



Note: $p < 0{,}001$ and Cramer's $V = 0{,}315$

The use of cost information in such environmental circumstances was studied focusing on the areas of interest: supplies/consumables, human resources and equipment.

Table 7.9.3 – Managerial Planning characteristics: Cost information usefulness for planning

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q29A	Supplies/consumables	3.93 (1st)	4.58 (1st)	38.244	0.00
Q29B	Human resources	3.63 (3rd)	4.43 (3rd)	33.358	0.00
Q29C	Equipment	3.73 (2nd)	4.48 (2nd)	35.949	0.00

Table 7.9.3 shows that British and Brazilian managers attributed the same order to items related to the usefulness of cost information for planning (Q29) in terms of the use of cost information to support planning processes. The suitable p that is lower than 0.05 supports a comparison between countries. The highest score in both countries was attributed to supplies or consumables, followed by equipment and human resources. Certain logic in this order can be detected, and this logic applies to Great Britain as well as to Brazil, i.e. from the processes of less complexity to the ones of higher complexity. This was expected. It can be noticed that Brazilian managers

attributed higher means to cost information usefulness for planning than their British counterparts in all aspects. As discussed before, this can be explained by contingent factors such as governmental policy and more predictability experienced by British managers in the use of cost information. Despite this, it must be said that they presented high means as well.

The study of the application of programmed and non-programmed decision making should explain bounded rationality when planning (see, for example, Simon, 1976, 1991; Haynes, 1999).

British managers showed planning 'human resources' as having the highest level in terms of the degree of programmed or structured decision-making and problem solving. According to the Table 7.9.4 (Q30), programmed decision making and problem solving in terms of planning human resources, e.g. professional sub-optimal use or poor training, represents the highest mean or 3.78. This is followed by supplies/consumables, e.g. waste or misappropriation, with a mean of 3.66, and equipment, e.g. disregard or equipment over/under utilization or poor installation, with a mean of 3.57.

Table 7.9.4 – Managerial Planning characteristics: Degree of structured decision-making and phase theorem – Managerial planning

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q30A	Supplies/consumables	3.66 (2nd)	3.76 (2nd)	1.8	0.18
Q30B	Human resources	3.78 (1st)	3.83 (1st)	0.875	0.35
Q30C	Equipment	3.57 (3rd)	3.58 (3rd)	0.189	0.66

Brazilian managers follow the same order given by British managers, the degree of programmed decision making and problem solving in terms of planning human resources with a mean of 3.83 was placed first, followed by planning of supplies/consumables with a mean of 3.76 in second and equipment with a mean of 3.58 in third. However, p is higher than 5% and, therefore, not suitable for comparisons between countries.

It is interesting and, to some extent, unexpected, to observe that the item planning human resources presented the highest mean of structured problem solving or programmed decision-making in both countries. Decision-making and problem solving involving human resources should consider elements of complex rationality (more individual, subjective or collectivist). Surely, the reason for this in Brazil resides in the fact that in that country human resources are civil servants and, therefore controlled by governmental laws.

Presence of opportunism within hospitals is explained, to some extent, by the presence of different goals and objectives pursued (see, for example, Lapsley, 1993, 1997; Thompson et al., 1991). This would make barriers between the clan and the hierarchy even more difficult to overcome. The similarity of goals (Q33) has been already discussed in previous section 7.2.2. This section discusses the goals influence when planning (Q31).

Table 7.9.5 – Managerial Planning characteristics: Influences and similarity of goals when planning

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q31A	(Influencing capacity) of background when planning	3.98	3.58	7.515	0.01
Q31B	(Influencing capacity) of organizational objective when planning	4.28	3.95	4.561	0.03
Q31C	(Influencing capacity) of public objectives when planning	3.70	4.09	8.752	0.00
Q31D	(Influencing capacity) of objective of the area/sector when planning	4.03	4.27	4.734	0.03
Q31E	(Influencing capacity) of clinical objective when planning	4.19	3.69	7.005	0.01

Table 7.10, which was derived from Table 7.9.5, shows the scores of items influence in the planning process (Q31). It is possible to see that British managers have the 'organisational objective' as the prime influencing one. In turn, their Brazilian counterparts rated 'objective of the area/sector' as the highest. It is not surprising that British managers make a vision of the whole when planning because, as discussed before, they presented elements to consider that they are more coherent in terms of complex rationality (objective, subjective, individual or collectivist) involvement in processes than their Brazilian counterparts. This characteristic supports the fact that British managers have general directives and a more organizational perspective. This is coherent in the case of clan or hierarchical form of organisation, i.e. a intermediary (medium) degree of goal incongruence. In this case non-programmed decision-making follows the general idea of behaviour congruence. General goals or ends will drive the process involving complex rationality (objective, subjective, individual or collectivist). Therefore, the modes of governance within British hospitals share congruent organisational objective/goals. The clan form should negotiate a decrease on the degree of ambiguity in performance measurement, which makes it get closer to the hierarchy (see Ouchi, 1980).

Brazilian managers, when assigning the 'objective of the area/sector' as the first one, showed coherence with some other contingent characteristics already described. They are less involved with scientific rationalism and they are involved in a mutable environment with an internal clan dominance. Table 7.10 provides evidence of a fragmented structure with strong local force and particular interests. Sectors assume their own identity on behalf of themselves superseding the

organisation and appear to be stronger than the modes of governance. However, the resultant fragmentation seems to be convenient and the opportunism, which emerges in the Brazilian context, is much more evident than in Great Britain. In this situation non-programmed decision-making does not follow any objective or behaviour congruence. Due to opportunism and environmental complexities the ambiguity of performance measurement is kept high, which is a characteristic of the clan form of organisation. It is important to notice that high degree of goal incongruence is a characteristic of the market form of organisations. Therefore, considering the analysis and discussions so far, Brazilian hospitals present a mosaic in terms of modes of governance. Surely, this keeps the internal environment highly vulnerable to opportunistic behaviour.

Table 7.10 – Order given to: When managers are planning, the influencing capacity of (Q31)

Items		Great Britain	Brazil
Q31A	Background	4th	5th
Q31B	Organizational objective	1st	3rd
Q31C	Public objectives	5th	2nd
Q31D	Objective of the area/sector	3rd	1st
Q31E	Clinical objective	2nd	4th

Note: The order given to items is based on the means showed in the Table 7.9.5.

It is important to recognise that managers' 'background' was scored as one of the last items to be considered in terms of influencing planning, i.e. fourth in Great Britain and fifth in Brazil. It was suggested by the theory, see Chapter 4, that background would be expected to exert stronger influence in managerial planning. Thus, evidence shows that, rules posed by managerialism or collectivism should restrain opportunism at the structure level.

The characteristic 'public objectives' assumes an almost opposite degree of importance in both countries, i.e. fifth in Great Britain and second in Brazil. There is no apparent reason for this. What can be said is inferred from the preceding discussion with regards to rationalism and complex rationalism. British managers should see or be more involved with individuals. Brazilian managers should treat the public as an entity rather than individuals. British managers assigned clinical objective in second. It can be said that this is coherent with what has been discussed in terms of behavioural congruence related to complex rationality and non-programmed decision-making.

7.2.7 Managerial Control

This section discusses the seventh research question[9] and Managerial control (see Table 6.2, Chapter 6). Tables 7.11.1 to 7.11.4 show the items explored in this research in relation to this dimension/construct.

Table 7.11.1 – Managerial Control characteristics: Dedication to the control process

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q6B	Time spent	2.78	3.00	3.358	0.07
Q7B	Judgement of time spent	3.14	3.43	3.788	0.05

In terms of whether managers control, Table 7.11.1 shows that they spend somewhat more than 50% of their managerial time with this function (Q6B). Even though a more accurate analysis could identify a slight trend in unbalanced distribution of the managerial time towards the control function, a 50% distribution between both activities seems more acceptable. This is suggested by the theory, see Chapter 5. British and Brazilian managers presented a balanced distribution of their managerial time. However, a p greater than 5% does not support any comparison between countries.

The item 'judgement of time spent' (Q7B) revealed means of 3.14 and 3.43 for British and Brazilian managers respectively, with a suitable p for comparison lower than 0.05. This means that managers of both countries, generally, consider the percentage of managerial time they dedicate to control activity as adequate or completely adequate. Forms and types of control practiced in both countries will be studied later in this chapter.

The usefulness of cost information for control considering environmental circumstances was studied focusing on the areas of interest: supplies/consumables, human resources and equipment.

Table 7.11.2 – Managerial Control characteristics: Cost information usefulness for control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q23A	Supplies/consumables	3.91 (1st)	4.63 (1st)	30.456	0.00
Q23B	Human resources	3.68 (2nd)	4.50 (2nd)	27.897	0.00
Q23C	Equipment	3.58 (3rd)	4.50 (2nd)	34.258	0.00

[9] *Do they control effectively? Do they consider cost information useful to support control processes? How do they consider control mechanisms and forms of control?*

In terms of the cost information usefulness to support control processes, it is more associated with activities involving 'supplies/consumables' than 'human resources' or 'equipment' in both countries (Q23). The same event took place, as already presented, in terms of planning, see Table 7.9.3. Table 7.11.2 shows that British and Brazilian managers assigned the highest value to the cost information for control 'supplies/consumables', with a suitable p for comparison lower than 5%. To some extent it was expected for Brazilian managers. They defended 'cost reduction' and 'reduce resource consumption' as the first two major applications for cost information in control and planning within hospitals.

As seen in the preceding section 7.2.5, Table 7.8, British managers ranked 'cost reduction' and 'reduce resource consumption' in second and third place, just after 'benchmarking clinical activities'. This is an acceptable reason for scoring the use of cost information for control 'human resource' second and 'equipment' third, the opposite of what they had done in terms of planning, see Table 7.9.3. They ranked cost information for control of 'human resources' processes one position above planning 'human resources' processes. It can be said that planning involves higher levels of complexity when compared with control. This cannot be considered as strategically determined because of, as already discussed, the degree of freedom they have for decision-making.

Brazilian managers indicated that the use of cost information follows almost the same order given, in planning and control, i.e. ranked first is 'supplies/consumables', second is 'equipment' and third is 'human resources'. In the case of control of equipment and human resources the position is the same. This situation, as discussed above, is also coherent with what has been shown before. The level of complexity was not enhanced. It can be said that, to some extent, planning and control of supplies/consumables involve a lower degree of complexity and non-programmed decision-making than those involved for human resources and equipment.

The study and understanding of the control process in terms of the phases and level of structure contributes to explaining whether means and ends are clear and also activities and inputs of the process (see, for example, Hopwood, 1987; Dant and Francis, 1998). This also contributes to the understanding and analysis of the degree of ambiguity in performance measurement.

In Great Britain, according to the Table 7.11.3 (Q24), programmed decision making and problem solving in terms of the control of human resources, e.g. professional sub-optimal use or poor

training, presents the highest degree of structured processes with a mean of 3.59. This is followed by supplies/consumables, e.g. waste or misappropriation, with a mean of 3.52, and equipment, e.g. disregard or equipment over/under utilization or poor installation, with a mean of 3.49. This is, therefore, the same order that was given in the case of planning (see Table 7.9.4). This order given to the degree of structured decision-making was unexpected. Equipment and supplies/consumables should be more structured than human resources because certainly they involve less variables and complexity.

Table 7.11.3 – Managerial Control characteristics: Degree of structured decision-making and phase theorem – Managerial control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q24A	Supplies/consumables	3.52 (2nd)	3.73 (3rd)	3.012	0.08
Q24B	Human resources	3.59 (1st)	3.88 (1st)	5.835	0.02
Q24C	Equipment	3.49 (3rd)	3.77 (2nd)	6.095	0.01

Regarding Brazil, Table 7.11.3 shows certain similarity with Great Britain in terms of the degree of programmed decision-making and problem solving in terms of control. The control of human resources is placed first in the degree of structured decision-making, with a mean of 3.88. However, there was an inversion in relation to Great Britain considering that control of equipment is placed second with a mean of 3.73 and supplies/consumables in third with a mean of 3.73.

Brazilian managers ranked 'human resources' first for both control and planning (see Table 7.9.4). However, in terms of 'supplies/consumables' and 'equipment', the structured degree for decision making in control presented a reverse order compared to the same for planning. 'Equipment' was ranked second and 'supplies/consumables' third. Brazilian managers consider that the control of human resources involves more programmed decision-making because, as said before, they are civil servants. Therefore, there are contingent factors such as governmental rules being applied. It is possible to say that this reduces the level of opportunism, but not the ambiguity in performance measurement.

The coefficient p is lower than 5% and, therefore, being acceptable for comparisons of control between countries. Managers of both countries seem to have similar management profile, i.e. human resources receive more investment in terms of planning and control.

The study of causes and process during the control are associated with the cybernetic form of control, which is more related to feedback (see, for example, Hofstede, 1981; Macintosh, 1994; Kloot, 1997). The alternative to it is the non-cybernetic form of control, which is associated to feed-forward form of control (see, for example, Hofstede, 1981). Whilst the cybernetic form of control is more prescriptive and functionalist, the non-cybernetic form is more descriptive and interpretative involving revision of the predictive model (see, for example, Emmanuel et al, 1993; Otley, 1994; Marginson, 1999).

Table 7.11.4 – Managerial Control characteristics: Types and forms of control

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q25A	Control of consumed material studying causes	3.40	3.94	13.998	0.00
Q25B	Control of consumed material changing the predictive model	2.89	3.15	2.543	0.11
Q25C	Control of consumed material studying the process	3.36	3.67	5.761	0.02
Q26A	Control the characteristics of the material used	3.26 (4^{th})	4.06 (4^{th})	27.468	0.00
Q26B	Control the characteristics of the professionals involved	3.88 (1^{st})	4.24 (2^{nd})	13.707	0.00
Q26C	Control the characteristics of the equipment employed	3.50 (3^{rd})	4.15 (3^{rd})	25.288	0.00
Q26D	Control the characteristics of the activity	3.88 (1^{st})	4.25 (1^{st})	11.466	0.00

The highest score given to the use of cost information for managerial control and planning (examined in the preceding section) was 'supplies/consumables'. Discussing forms and types of control, it is important to notice that British managers assumed the act of control processes of consumed material as being firstly aimed at 'studying causes', see Table 7.11.4 (Q25). This was followed by 'studying the process'. This is coherent and can be considered in accordance with the literature discussed in Chapter 5, i.e. control by causes involves the use of more information because it embraces inputs and processes. In turn, cybernetic forms of control involve more programmed decision-making and objective rationality. Therefore, the order given by British managers is not a surprise. 'Changing the predictive model' was placed in third. According to these findings, the act of control processes of consumed material tends towards the cybernetic model. The characteristic related to the double loop or feed forward is ranked third, this is to say 'changing the predictive model'.

The same phenomenon occurred with Brazilian managers, with an acceptable p lower than 5%, for the first ranked 'studying causes' and the second ranked 'studying the process'. The third ranked 'changing the predictive model' presents an unacceptable p for comparison greater than 5%. As discussed before, Brazilian hospitals seemed to have an apparently undefined mosaic of

mode of governance. This is convenient because it supports opportunistic behaviour. It is well-known that non-cybernetic forms of control will emerge when the predictive model fails or is poor or varies intensively. This happens in Brazilian hospitals. The higher degree of goal incongruence and the higher degree of ambiguity of performance measurement or even the poor understanding of the processes aggravate the middle management mediation role. This is a fitting scenario for opportunistic behaviour.

Table 7.11.4 shows that in Great Britain, intervention in the control processes points to the non-cybernetic type or form of control. In terms of necessity of control, see Table 7.11.4 (Q26), British managers ranked the revision of 'the characteristics of the professional involved' first. It is compatible with preceding findings where the human resources were ranked first in terms of the degree of structured decision-making/problem solving. This shows that certain emphasis was given to 'human resources' in terms of the studied managerial dimensions of planning and control. This also involves more investment, or an attempt, to decrease or manage the degree of ambiguity in hospital processes.

Occupying the bottom positions are control related more to the inputs of the control process or 'material used' and 'the characteristic of the equipment employed' for managers of both countries. It is acceptable in the case of Great Britain given the degree of structured decision-making processes and the lesser use of different predictive models and goals coherence but not in terms of Brazil.

The revision of 'the characteristics of the activity' revealed a split of the process into parts and each fraction involves 'supplies/consumables', 'human resource' and 'equipment'. British managers ranked this second, whereas Brazilian managers ranked it first. There is a satisfactory p for comparison of less than 5%.

Subsequently, Brazilian managers showed an inverted order of the first two highest scores, i.e. the revision 'of the characteristics of the activity' first and the revision 'of the characteristics of professionals involved' second. Despite this, the notion that managers of both countries exercise a non-cybernetic form of control is supported; however, for reasons already provided, British managers exert more cybernetic forms of control than their Brazilian counterparts. There is a suitable p of less than 5% favouring comparison between countries.

According to Table 7.11.5, British managers consider most important the 'control mechanisms to be capable of responding quickly' (Q27) for 'human resource'. This is coherent with a more subjective and, consequently interpretative approach (see, for example, Burchell et al., 1980). Human resources are more difficult to account for in terms of control. After it, other more functionalist forms of control were posed, i.e. control regarding 'equipment' and third in terms of 'supplies/consumables'. Through the present analysis, it can be observed that 'human resources' have received a certain emphasis by British managers. According to the discussion so far, British managers emphasise planning and control of human resources.

Table 7.11.5 – Managerial Control characteristics: Control mechanisms velocity of response

Items		Means		Chi-Square	p
		Great Britain	Brazil		
Q27A	In case of supplies/consumables	2.92 (3rd)	3.69 (1st)	19.752	0.00
Q27B	In case of human resources	3.10 (1st)	3.38 (3rd)	3.241	0.07
Q27C	In case of equipment	2.99 (2nd)	3.53 (2nd)	10.948	0.00

Brazilian managers assigned first to control mechanisms to be capable of responding quickly for 'supplies/consumables', second for 'equipment' and third for 'human resource'. This is a more objective and, consequently, coherent with a functionalist approach. In the same way, this is consistent, to some extent, with what has been found for Brazilian managers in this analysis.

7.3 Planning, Control and Usefulness of Cost Information

This section discusses the eighth research question[10] and Planning, Control and usefulness of cost information. Tables from 7.12 to 7.21 illustrate this discussion. The first section of this chapter discussed the dimensions/constructs' reliability to be addressed in this section. They presented a Cronbach's Alpha value higher than the recommended minimum of 0.60 (Malhotra, 1996). Therefore, their internal consistency is adequate and supports the managerial dimension adopted.

According to the Table 7.12, managers in Great Britain, irrespectively of their backgrounds, ranked highest the 'cost information perceived usefulness' for managerial planning and control.

[10] *Do managers perform planning and control differently? Do clinician managers and administrative managers perform planning and control differently?*

This suggests acceptable comprehension and support for the items studied in its description. An acceptable p lower than 5% supports the comparison between constructs.

As one can see, the investigated dimensions/constructs in Great Britain presented 'decision making and problem solving' in second place. In third place come the others, i.e. 'managerial planning', 'managerial control', 'cost information specific factors' and 'organizational managerial factors'. Given the contingent aspects such as governmental policies, this supports the presence of a common managerial behaviour that, to some extent, indicates managerialism.

Table 7.12 - Descriptive and comparative analysis between the dimensions/constructs for Great Britain and Brazil considering all managers

Country	Constructs	Descriptive measures					p.
		Min.	Max.	Mdn	Mean	Std. Deviation	
Great Britain	1 – Organizational Managerial Factors	1.8	4.5	3.1	3.1	0.5	< 0.001
	2 – Cost Information Specific Factors	1.8	4.7	3.3	3.2	0.7	
	3 – Decision making, Problem solving	2.3	4.4	3.4	3.4	0.4	**4 > 3 > 6=5=2=1**
	4 – Cost Information Perceived Usefulness	2.4	4.7	3.7	3.6	0.5	
	5 – Managerial Planning	2.3	4.5	3.2	3.2	0.5	
	6 – Managerial Control	2.3	4.2	3.3	3.2	0.4	
Brazil	1 – Organizational Managerial Factors	1.7	5.0	3.2	3.2	0.6	< 0.001
	2 – Cost Information Specific Factors	1.1	4.6	2.8	3.0	0.9	
	3 – Decision making, Problem solving	2.0	4.4	3.4	3.4	0.5	**4 > 6=5 > 3 > 1=2**
	4 – Cost Information Perceived Usefulness	2.6	5.0	4.4	4.4	0.4	
	5 – Managerial Planning	1.9	4.7	3.6	3.6	0.5	
	6 – Managerial Control	2.1	4.7	3.7	3.7	0.5	

Note: p stands for the Friedman's test.

Brazilian managers ranked 'cost information perceived usefulness' first. 'Managerial control' and 'managerial planning' were ranked second. In third place comes 'decision making' and 'problem solving'. In fourth place comes 'organizational managerial factors' and 'cost information specific factors', for which there is an acceptable p lower than 5%. One can see that these scores were more dispersed between Brazilian managers. This gives some evidence of

differences in lines of managerial action, which can be related to a more stressed distinction between modes of governance.

Tables 7.13, 7.14 and 7.15 show the scores given to the available 6 constructs according to managers' backgrounds.

Table 7.13 – Descriptive analysis and comparison of the dimension/constructs for each Country relatively to managers with the background: **Clinician**

Country	Constructs	Descriptive Measures					p
		Min.	Max.	Mdn	Mean	Std. Deviation	
Great Britain	1 – Organizational Managerial Factors	2.3	4.0	3.1	3.1	0.5	< 0.001
	2 - Cost Information Specific Factors	1.8	4.4	3.3	3.2	0.7	
	3 - Decision making, Problem solving	2.4	4.1	3.3	3.3	0.4	**4 > 6=5=3=2=1**
	4 - Cost Information Perceived Usefulness	2.4	4.7	3.8	3.8	0.6	
	5 - Managerial Planning	2.3	4.1	3.2	3.1	0.5	
	6 - Managerial Control	2.3	4.2	3.2	3.2	0.5	
Brazil	1 – Organizational Managerial Factors	1.7	5.0	3.1	3.2	0.7	< 0.001
	2 - Cost Information Specific Factors	1.1	4.3	2.6	2.6	0.8	
	3 - Decision making, Problem solving	2.4	4.4	3.4	3.4	0.5	**4 > 6 > 5=3 > 1 >2**
	4 - Cost Information Perceived Usefulness	2.6	5.0	4.5	4.4	0.5	
	5 - Managerial Planning	2.3	4.7	3.5	3.5	0.6	
	6 - Managerial Control	2.1	4.7	3.7	3.6	0.5	

Note: p stands for the Friedman's test.

Table 7.13 shows that clinician managers of Great Britain assigned the highest score to 'cost information perceived usefulness'. There was no significant difference between all other constructs because they received equal score coming second. Given the contingent circumstances, this strengthens the evidence of the preceding accepted managerialism and common line of managerial action. It also shows that, despite being clan members, they are part of the hierarchy and have administrative training, which promotes the unity of managerial and clinical knowledge reinforcing congruent behaviour. This also decreases the degree of ambiguity in performance measurement. There is a suitable p of less than 5%. This fact reinforces the

importance of the hypotheses test in Chapter 8 investigating the adjustment of these managers to the applicability of cost information in Great Britain, i.e. 1 - clinician's involvement in planning and control and the use of cost information in planning and control, 2 - the observation of goals and the use of cost information in planning and control, and 3 - influential forces and the applicability of cost information in planning an control.

In turn, Brazilian clinician managers ranked 'cost information perceived usefulness' highest. Second place was assigned to 'managerial control'. In third came both 'managerial planning' and 'decision making and problem solving'. Ranked fourth was 'organisational managerial factors' and fifth 'cost information specific factors'. Cost information perceived usefulness coincides with the general point of view. This supports the presence of variations in managerial perceptions and attitudes while conducting actions within hospitals. Given the contingent aspects such as (lack of) governmental policies, this indicates a more diffuse and independent managerial behaviour. This reinforces the high degree of ambiguity of performance measurement and the imperfection of knowledge involved in processes. In this case the clan keeps the clinical freedom and opportunistic behaviour thrives.

According to Table 7.14, British administrative managers also assigned the highest score to 'cost information perceived usefulness'. In second place came four other constructs: 'managerial control', 'managerial planning', 'decision making and problem solving', and cost information specific factors. Ranked third was 'organizational managerial factors'. Despite the existence of a third factor, one can see that four constructs are grouped in second place which promotes the coherence between managerial dimensions. Comparing these with the scores and the order given by the British clinicians (see Table 7.13) is possible to assert that there is no difference between them, i.e. both backgrounds present the very similar perception for all managerial dimensions/constructs. Given contingent circumstances, it can be said that there is an integration of knowledge (managerial and clinical), what certainly contributes to mitigate differences between the clan and the hierarchy. This is coherent to what has been discussed so far.

Brazilian administrative managers scored 'cost information perceived usefulness' highest. Placed second were both 'managerial control' and 'managerial planning' and, in third place, came the other three: 'decision making and problem solving', 'cost information specific factors', and 'organisational managerial factors'. This presents a slight difference compared to the preceding analysed tables and, to some extent, indicates a movement in the direction of certain coherence of managerial lines of action and structures. Thus, one can assert that administrative managers in

Brazil have some coherence. Comparing these with the scores and orders given by Brazilian clinicians (see Table 7.13) it is possible to assert that it is still has differences in terms of perceptions, i.e. both backgrounds present discrepancies between the managerial dimensions/constructs. Therefore, it can be said that there is a profusion of different actions, probably reflexes of the profusion of different goals, intensive use of different predictive models and contingent factors such as (lack of) governmental policies. This reinforces the presence of different modes of governance with higher degree of goal incongruence.

Table 7.14 - Descriptive analysis and comparison of the dimensions/constructs for each Country relatively to managers with the background: **Administrative**

Country	Constructs	Descriptive Measures					p
		Min.	Max.	Mdn	Mean	Std. Deviation	
Great Britain	1 - Organizational Managerial Factors	1.8	4.5	3.1	3.1	0.5	< 0.001
	2 - Cost Information Specific Factors	1.8	4.7	3.1	3.3	0.8	
	3 - Decision making, Problem solving	2.5	4.4	3.4	3.4	0.4	**4 > 6=5=3=2 > 1**
	4 - Cost Information Perceived Usefulness	2.7	4.4	3.7	3.7	0.4	
	5 - Managerial Planning	2.4	4.5	3.2	3.3	0.5	
	6 - Managerial Control	2.4	4.0	3.3	3.3	0.4	
Brazil	1 - Organizational Managerial Factors	1.8	5.0	3.2	3.2	0.6	< 0.001
	2 - Cost Information Specific Factors	1.6	4.6	3.1	3.2	0.8	
	3 - Decision making, Problem solving	2.1	4.3	3.3	3.4	0.4	**4 > 5 = 6 > 3=2=1**
	4 - Cost Information Perceived Usefulness	3.4	5.0	4.4	4.4	0.4	
	5 - Managerial Planning	1.9	4.6	3.6	3.6	0.5	
	6 - Managerial Control	2.4	4.5	3.7	3.7	0.4	

Note: p stands for the Friedman's test.

Table 7.15 shows that managers with both backgrounds in Great Britain ranked 'cost information perceived usefulness' and 'decision making and problem solving' first. All other items were ranked together in second. Such a situation corroborates what has been said before. In more detail, it was previously suggested that British managers with a clinical background have taken courses with administrative content, thus, one can say that there is some evidence that this is an action that improves the coherence in the managerial line of action and thought. This contributes

to integrate the clan with the hierarchy. Considering the analysis of data obtained from the tables, it is observable high similarity between backgrounds. They converge to a common line of thought meaning adaptability to the major explanatory contingent factors.

Table 7.15 - Descriptive analysis and comparison of the dimensions/constructs for each Country relatively to managers with the background: **Both - clinician and administrative**

Country	Constructs	Descriptive Measures					p
		Min.	Max.	Mdn	Mean	Std. Deviation	
Great Britain	1 – Organizational Managerial Factors	2.1	4.0	3.2	3.2	0.5	< 0.001
	2 - Cost Information Specific Factors	1.8	4.3	3.3	3.2	0.7	
	3 - Decision making, Problem solving	2.3	4.2	3.4	3.5	0.4	**4=3 > 6=5=2=1**
	4 - Cost Information Perceived Usefulness	2.4	4.1	3.4	3.4	0.5	
	5 - Managerial Planning	2.4	4.1	3.1	3.1	0.4	
	6 - Managerial Control	2.5	4.0	3.2	3.2	0.4	
Brazil	1 – Organizational Managerial Factors	2.3	4.6	3.1	3.2	0.6	< 0.001
	2 - Cost Information Specific Factors	1.3	4.3	3.8	3.2	1.2	
	3 - Decision making, Problem solving	2.0	4.1	3.5	3.3	0.7	**4 > 6 = 5 > 3=2=1**
	4 - Cost Information Perceived Usefulness	3.8	4.8	4.4	4.5	0.3	
	5 - Managerial Planning	2.2	4.6	3.7	3.6	0.6	
	6 - Managerial Control	2.7	4.7	3.8	3.7	0.6	

Note: p stands for the Friedman's test.

Brazilian managers with both backgrounds reproduced the same situation as those with only the administrative background. One can say that differences are still present considering clinicians' background. Brazilian managers have shown some coherence, i.e. they do not share a common line of thought. This reinforces the differences between the modes of governance. It is also a mirror of the circumstances in which they are involved, such as imperfection of knowledge of the processes and low ability to measure outputs, ambiguity of goals/ends and incompleteness of task instrumentality.

The managers' backgrounds influence the decision-making/problem solving process differently when it is a non-programmed situation. Table 7.16 shows that British clinicians are more

independent decision-makers than their Brazilian counterparts. The same is true for the administrative managers.

Table 7.16 – Background and decision-making/problem solving

Q21. When you are facing a situation in the decision-making/ problem solving process …	Comparison between backgrounds		
	Clinician	Administrative	Both
Q21a. Decide/solve it anyway and communicate it?	GB>BR	GB>BR	n.s.
Q21b. Look for advice from superiors?	GB<BR	GB<BR	n.s.
Q21c. Look for advice from subordinates?	n.s.	n.s.	n.s.
Q21d. Consult manuals/guidelines?	n.s.	GB<BR	GB<BR
Q21e. Consult computer systems?	n.s.	n.s.	n.s.

The level of analyses is 'countries'.
Shaded areas show p, Kruskal-Wallis test, equal or lower than 5%.
n.s. Non-significant

The contingent factors explain this process. There is a prevalence of decentralisation in Great Britain as a result of governmental policies, as studied in this thesis in Chapter 2. The same situation occurs in Brazil, when the external policy emphasises the hierarchy, as studied in Chapter 3.

Due to a more accentuated scarcity of resources, Brazilian managers have to create more mechanisms of planning and control. It is suggested later in this thesis that they have created an informal chain between hospitals seeking to mitigate this problem. This reason is given by the strong centralisation expressed in Q21b associated with a complex and unpredictable market. Managers of both backgrounds behave in a very similar way. The centralisation is not theoretically supported in case of complex environments. This means that Brazilian managers are under pressure of ambiguous ends/goals and incomplete task instrumentality, i.e. beliefs about cause/effect knowledge. This increases considerably the opportunistic behaviour and the presence of complex rationality permeating the decision-making/problem solving process.

A similar situation occurs with British managers. As one can see, British managers behave similarly, independently of the background, i.e. clinicians or administrators work in a decentralised way. Comparatively, British managers experience more clear and unambiguous goals/ends and lower degree of uncertainty in terms of beliefs about cause/effect knowledge.

It can be observed in Table 7.17 that British clinicians rank less the item 'use of different predictive models', mainly because they are immersed in a more stable and predictable environment as is expected. Concerning the administrators, there was no acceptable difference between them, perhaps due to the naturally different use of predictive models by administrators.

Table 7.17 – Background and use of different predictive models

Question	Comparison between means		
	Clinician	Administrative	Both
Q28. Have you used different predictive models (any instrument to help anticipation) when planning?	GB<BR	n.s.	GB<BR

As expected, Brazilian managers (clinicians or both) use a higher number of different variables to compound their predictive models than their British counterparts. The managers' backgrounds influence the use of different predictive models differently when planning, in the researched countries. Brazilian managers, as discussed before, use significantly more different predictive models. Various reasons can be provided, e.g. uncertainty, ambiguous goals/ends and incomplete task instrumentality. This deepens the differences between modes of governance.

Table 7.18 shows that the managers' backgrounds influence the importance of the use of cost information in decision-making/problem solving differently when planning, in the countries studied.

Table 7.18 – Background and cost information usefulness for decision-making/problem solving

Question	Comparison between means		
	Clinician	Administrative	Both
Q20. Do you agree that cost information improve your decision-making/problem solving when you are planning?	GB<BR	GB<BR	GB<BR

Again, it is possible to observe a difference between major explanatory factors influencing the use of cost information in planning and control processes. British managers present a lower mean because of, to some extent, more environmental predictability. Comparatively, British managers have higher ability to measure outputs and decrease the uncertainty in cause/effect relationships. Consequently, there is less opportunistic behaviour and complex rationality involved in decision-making process. Brazilian managers, due to the permanent scarcity of resources and considerable unpredictability, should use much more cost information. The comparatively more use of cost information by Brazilian managers can also be explained by the fact that cost information has just started to be generated in hospitals. Therefore, it has been hailed as a powerful agent of transformation. It is important to highlight that according to the literature presented (discussed in Chapter 3) it is expected that Brazilian managers use cost information in less complex exercises such as cost reduction than British managers.

The managers' backgrounds also influence the managerial role, in the researched countries, differently due to contingent factors. It is possible to observe in Table 7.19 that clinician and administrative British managers consider themselves more resource allocators. This is what has been demanded from them, mainly in the last 20 years. Brazilian clinicians consider themselves more disturbance handlers and Brazilian administrators consider themselves more entrepreneurs.

Table 7.19 – Background and managerial function

Q8. How do you classify the exercise of your function as:	Comparison between means		
	Clinician	Administrative	Both
Q8a. Entrepreneur	n.s.	GB<BR	GB<BR
Q8b. Disturbance handler	GB<BR	n.s.	n.s.
Q8c. Resource allocator	GB>BR	GB>BR	n.s.
Q8d. Negotiator	n.s.	n.s.	n.s.

Brazilian clinicians consider themselves more disturbance handlers. This can be explained, to some extent, by shortages of supplies/consumables, human resources and equipment in Brazilian hospitals. Also, differences between modes of governance (clan and hierarchy) emphasise goal ambiguity and, consequently, more divergence in the 'means' or more uncertainty in terms of cause/effect relationships. Such a poor environment should demand from administrators more creativity, initiatives and other actions related to entrepreneurism.

The managers' backgrounds influence the judgement of usefulness of cost information differently, in the researched countries according to Table 7.20.

Table 7.20 – Background and cost information usefulness

Q14. Do you think cost information is useful for:	Comparison between means		
	Clinician	Administrative	Both
Q14a. Surveillance	GB<BR	GB<BR	GB<BR
Q14b. Prediction	GB<BR	GB<BR	GB<BR
Q14c. Control	GB<BR	GB<BR	GB<BR
Q14d. Planning	GB<BR	GB<BR	GB<BR

Due to different contingent factors in the analysed countries, it is observable that Brazilian managers gave more importance to cost information than their British counterparts. This can be explained because British managers have been exposed to cost information with greater intensity than their Brazilian counterparts. It is possible to state that, since British managers have much more experience in conducting planning and control involving cost information; they have a real concrete perception about its usefulness.

The managers' backgrounds influence the access to cost information and resource consumption in treatments or clinical specialties differently, in the researched countries, see Table 7.21.

Table 7.21 – Background and cost information access

Question	Comparison between means		
	Clinician	Administrative	Both
Q9. Do you have access to information about costs and resource consumption in treatments or clinical specialities?	GB>BR	GB>BR	n.s.

Given the contingent factors, British managers have more access to cost information than their Brazilian counterparts. They have more developed information technology and are, consequently, better informed.

To summarize, in considering the eighth question, managers perform planning and control differently. The environment can be regarded as responsible for greater differences. In terms of clinician managers and administrative managers performing planning and control, it can be said that they do it differently in terms of countries, but it is not possible to assert that they do it differently within the same country.

This chapter presented and discussed the perceived usefulness of cost information for planning and control within public hospitals. The next chapter will investigate the hypotheses using the survey data and further insights gained from the case studies. Despite being considered descriptive in essence, to some extent, some causal relationships between items or concepts or variables are tested. In this case, the qualitative data will be used, as described before, seeking to "help by validating, interpreting, clarifying, and illustrating quantitative findings" (Miles and Huberman, 1994, p. 41). This will enrich the analysis.

According to contingency theory - since there is no one best organisational structure -, the optimal organisational structure for a given situation depends on many factors, e.g. the external environment, the degree of task uncertainty, technology, and so on. Hayes (1977), for example, argued that a unit is influenced by different features of the environment and the degree of task uncertainty. He further hypothesised that the success of subunits was dependent on several contingencies. Other authors have tested and correlated different features of managerial dimensions or factors (see, for example, Drazin and Van de Ven, 1985; Mak, 1989; Kim, 1988).

In the case of this research, given its nature already discussed, the use of cost information in planning and control depends on several contingencies such as:

a. internal factors (dedication time, programmed and non-programmed decision-making, phase and non-phase problems solving, types of control, objectives);
b. interdependency factors (intra-departmental, intra-groups);
c. environmental factors (uncertainty, use of different predictive models);
d. structural factors (modes of governance, presence of diversified goals and objectives).

Different countries will probably, relate differently to these variables and present possible different correlation between items and concepts because of the different levels of organisational insulation they experience. Results would suggest that contingency theory can explain these probable differences in terms of public hospitals in the investigated countries.

Seeking to refine and explore this context the next chapter will discuss the hypotheses.

Chapter summary

Certain general findings are presented in Table 7.22. As one can see, differences impact highly in terms of hospital administration.

Table 7.22 – General findings

Great Britain	Brazil
Decentralization	Centralization
Complex rationality	Rationality
General goal alignment	Goals fragmentation
Coherent lines of managerial action	Difference in lines of managerial action
Integrated managerial structure	Dichotomous structure
High cost information usefulness	High cost information usefulness

The results revealed general similarities and dissimilarities in both countries. Firstly, the figures are expressive in favour of Great Britain with a profile most adjusted to a complex environment. Decentralization and general goal alignment means better ability in judging 'means' and 'ends' and providing the necessary 'strategies' to make them happen. These are characteristics of the managerialism involved. Planning and control in such circumstances can be considered adequate from the rationalist and pragmatic perspective (Haynes, 1999).

In Brazil, centralisation and goal fragmentation mean that planning and control activities, to some extent, are left adrift from circumstances and eventualities. The environment certainly

contributes to this. There are common delays in governmental budgeting and external policy is erratic. This is examined further in the next Chapter 8.

British managers consider organisation objectives as superior to the others tested (such as an individual or a group). This suggests that the organisation's objectives are posed above governing groups, which supersedes problems caused by opportunism and bounded rationality. This is an acceptable social perspective because it benefits the organisation rather than uniquely a group or individual. It can, therefore, be considered a more social and pragmatic perspective within hospitals in both countries. Brazilian managers indicate a different perspective.

If the background of the British managers does not influence in distinguishing differently decision making and problem solving, planning and control activities one can infer that there is a managerial body within hospitals with a certain level of cohesion. Such cohesion was confirmed when they were asked about objectives leading their actions. They considered the organisation objectives superior to any other. In this case, the behavioural congruence, as an agreed set of actions rather than goal coherence for hospital managers, emerged and is widely accepted. Again, Brazilian managers have reinforced certain differences between backgrounds in distinguishing these managerial dimensions.

Behavioural congruence is able to restrict, to some extent, the opportunistic behaviour that is very common in the case of transaction inefficiencies. It is important to note that the idea of behaviour congruence is related to the contention of opportunism through leading to a more pragmatic situation rather than an optimal one.

The consideration of high cost information usefulness was largely expected in both countries. This supports the idea of rationalism and managerial analysis in planning and control activities within hospitals in both countries. Planning and control activities take into account accounting information independent of the decision-making or problem solving approach. In this case one can assert that the cost information is understood for all approaches and can be focused simultaneously as rational and social information.

British managers are seen as free from structures of governance to make decisions and solve problems in contrast with their Brazilian counterparts who are more structure-dependent. This can be considered as the result of the policy of devolution. The principles were accepted and absorbed by intermediate level managers. This ability provides agility to the decision making

process because the solution is provided as close as possible to the problem. Brazilian hospitals are more centralised and decisions are made locally and those related to resource consumption or equipment are ignored by top managers.

In Great Britain, the hospitals' managers were pushed into a managerialist context where the science and logic of the market model were imperative. Management Budgeting and the Resource Management Initiative contributed to at least matching structures and systems with a more efficient management and bureaucracy. Managers were clearly affected by the context and then reacted, which in turn certainly influenced future policy making.

Chapter 8 - The contribution of the case studies and Hypotheses presentation

This thesis is eminently quantitative therefore, hypotheses are tested using quantitative data and the case study interviews seek to deepen understanding of the research issues. Firstly, this chapter presents the case study settings. The hypotheses tests follow this. It applies the statistical method of Pearson's correlation whilst the interviews, as discussed in Chapter 6, are used to help interpret, clarify and illustrate findings.

According to the literature reviewed in chapters 4 and 5, accounting systems can be integrative and also, provide support to both objective rationality and complex rationality involved in hospital day-to-day management. They are considered responsible for the external boundaries of the organisation interacting with the external environment and, consequently, its rational profile. Accounting systems also provide elements for coercion or motivation and interfere with the distance between organisational members, consequently, allowing the flux of complex rationality. They have been used to restrain opportunism and also, to illuminate clinical performance within hospitals reducing the degree of ambiguity involved. They permeate modes of governance, e.g. the clan and the hierarchy. Chapter 7 discussed the scenario and circumstances related to major explanatory factors for the middle management mediation role in the studied countries.

Given the contingent aspects, variables such as environmental changes, which can be represented by the use of predictive models, and uncertainty are statistically correlated and tested relatively to internal items or variables, i.e. cost information use, control mechanisms, decision-making and problem solving. This chapter presents hypotheses that were tested seeking to study and understand some of these correlations. The results will be presented together with interview extracts or *vignettes* seeking to help to, as posed before, clarify, emphasise or illustrate the quantitative findings.

The first part of this chapter introduces the case study settings and discusses planning and control processes in both countries. The idea is to provide a broader view of the organisations and shows the substratum and delimiting aspects of planning and control processes. These delimitation and substratum will support the understanding and future discussions involving the hypotheses.

The second part of the chapter deals with the hypotheses. The hypotheses are tested using the Pearson's correlation, therefore, in total coherence with the proposed methodology. They are presented in 13 groups:

1	The clinicians' involvement in planning and control and the use of cost information in planning and control
2	The observation of goals and the use of cost information in planning and control
3	Influential forces and the applicability of cost information in planning and control
4	Time spent with planning and control and assessment of this time
5	Correlation between application of phase theorem in planning and control
6	Process elements and forms of control
7	Cost information usefulness for planning and control and support to decision-making
8	Cost information usefulness and benchmarking of activities
9	Cost information usefulness for cost reduction and its effective use as an element of managerial control
10	The rational use of cost information and environmental uncertainty and prediction
11	The planning and control responsibility and the use of different predictive models when planning and adoption of mechanisms of control
12	The use of different predictive models when planning and controlling
13	Centralisation and use of cost information for control administrative activity

The first group of hypotheses intends to investigate the involvement of clinicians, or members of the clan, in planning and control. It was discussed that the Government has promoted the use of cost information for clinical development. This includes certain activities such as Benchmarking.

The second group of hypotheses is going to test the observation of goals in terms of individuals, groups and the organisation with the applicability of cost information in planning and control within the hospital. The third group of hypotheses investigates whether forces such as the background, through which is possible to identify the member of the clan or the hierarchy influence the applicability of cost information in planning and control. Other forces tested include organisational and public objectives.

The fourth group of hypotheses will verify whether the managers consider the time they spend planning and controlling are adequate. The fifth group is going to test whether the application of phase theorem in the planning process is related to its application in the control processes. It is important to note that phase theorem for problem solving is equivalent to the use of programmed decision-making. Both mechanisms involve routine processes.

The sixth group will correlate elements of control seeking to identify the mechanisms involved. This group of hypotheses involves the specific areas of interest: supplies/consumables, human resources and equipment. The seventh group of hypotheses will test the usefulness of cost

information for planning and control related to its capacity in terms of facilitating the decision-making.

The eighth group of hypotheses explores the cost information usefulness for control and benchmarking of both administrative and clinical activities. The ninth group tests the usefulness of cost information for planning and control relatively to supplies/consumables, human resources and equipment.

The tenth group correlates certain technical rational uses of cost information such as reduction of resource consumption with the characteristic of uncertainty reduction. It also tests the cost reduction and control of administrative activity. The eleventh group of hypotheses correlate planning and control as being administrator's responsibilities and the use of different predictive models and certain forms of control.

The twelfth group investigates the use of different predictive models and certain forms of control and, finally, the thirteenth group correlates centralisation and the usefulness of cost information for control administrative activity.

The quantitative data is known as being hard and reliable whilst the qualitative data is characterised as being rich and deep. Also, the image of the social reality is considered static and external to the actor, in terms of the quantitative approach, and processual and socially constructed by the actor, in terms of the qualitative approach (Bryman, 1998, p. 94). Therefore, the use of quantitative and qualitative techniques to test, investigate, comment and discuss the hypotheses has as the principal intention the use of the potentialities of both techniques. Seeking this, the groups of hypotheses were considered under the light of interviews.

At the end of the chapter, the similarities and dissimilarities found are put together and discussed.

8.1 The Case Study settings

The interviews involved managers of four hospitals: two hospitals in Great Britain and two in Brazil. Hospitals in Great Britain were chosen based essentially on their positions in the National Cost Index. Furthermore, hospitals were chosen with similar geographic environment, size and

complexity of service provision. Despite major difficulties in Brazil, such as the non-existence of an analogous national cost index, the same process was followed.

The coding system presented in Figure 8.1 was built up to identify interviewed managers and case study settings.

Figure 8.1 – Coding system

Country	Hospital Code	Background Middle Manager	Code – Number	Interviews Total	
Great Britain	MAIOR NHS Trust	Clinician	CMM – 2	5	10
		Administrator	AMM – 3		
	MENOR NHS Trust	Clinician	CMM – 2	5	
		Administrator	AMM – 3		
Brazil	BIGGER Public Hospital	Clinician	CMM – 5	11	22
		Administrator	AMM – 6		
	SMALLER Public Hospital	Clinician	CMM – 5	11	
		Administrator	AMM – 6		

Each interviewed manager was numbered accordingly to the chronological order of the interviews. Therefore, code and a number are applied to each quote seeking to give each person a unique identifier. Figures 8.2 and 8.3 show the overall view of interviewed middle managers in Great Britain and Brazil respectively. This is due to the fact that despite their contribution to a complete knowledge of the situation given the objectives already described it was not necessary to use interview extracts or *vignettes* from all interviewed managers.

Figure 8.2 – Codes and areas/sectors/directorates of British middle managers

MAIOR NHS Trust	MENOR NHS Trust
CMM1 – Pharmacy Services	CMM4 – Trauma and Orthopaedics
AMM2 – Supplies/consumables	AMM6 – Human Resources
CMM3 – Elderly Medicine (Care)	CMM8 – Radiology
AMM5 – Facilities	AMM9 – Finance
AMM7 – Human Resources	AMM10 – Estates

Figure 8.3 – Codes and areas/sectors/departments of Brazilian middle managers

BIGGER Public Hospital	SMALLER Public Hospital
AMM1 – Finance	CMM4 – Paediatrics
AMM2 – Costing	CMM6 – Attendance
CMM3 – Casualties	AMM8 – Human Resources
AMM5 – Supplies/consumables	CMM10 – Casualties
CMM7 – Attendance	AMM11 – Costing
CMM9 – X Ray (Radiology)	CMM12 – Clinical (Orthopaedics)
CMM14 – Wards	AMM13 – Quality (General Control)
AMM16 – Human Resources	CMM15 – X Ray (Radiology)
AMM18 – Maintenance (Estates)	AMM17 – Supplies/consumables
AMM19 – Accounting	AMM21 – Finance
CMM20 – Quality	AMM22 – Budgeting

8.1.1 The MAIOR NHS Trust in Great Britain

The MAIOR NHS Trust is a typical main acute hospital and 24-hour accident and emergency departments. It has an income from activities of more than £170 million[1] (see Table 8.1) and more than 3500 employees. This hospital is located in a large conurbation and it has over 1300 beds.

Table 8.1 – Income/expenses of MAIOR NHS Trust, March 1999

Incomes	%
Health Authorities	73
GP Fundholders	2
Other	1
Income from Core Activities	76
Income from Other Activities	24
Total Income	100

Expenses	%
Staff Costs	56
Supplies/Services	21
Depreciation/Premises	11
Miscellaneous	12
Total Expenditure	100
Operating Surplus	(+) 4

The trust has its management structure divided into 21 clinical directorates. Almost all of those directorates have a directorate manager supporting the clinical director. The staff of MAIOR NHS Trust is set out in Table 8.2.

Table 8.2 – Staff numbers[2] in MAIOR NHS Trust, March 1999

Medical and Dental	380
Administration and Estates	990
Healthcare and Assistants	210
Nursing Staff	1880
Prof/Technical	500
Total	3960

The MAIOR NHS Trust occupies a top position in the National Reference Cost Index. This hospital is neighboured by six other acute hospitals.

8.1.2 The MENOR NHS Trust in Great Britain

In turn, the MENOR NHS Trust is also a typical but smaller main acute hospital and 24-hour accident and emergency departments. It has an income from activities of more that £56500 million (see Table 8.3) and about 1600 employees. This hospital is located in city of a shire county and it has over 400 beds.

[1] The figures were obtained from data provided by the hospitals, and NHS Executive – West Midlands.
[2] Some numbers are purposively not precise for reasons of confidentiality. This does not affect the objectives.

Table 8.3 – Income/expenses of MENOR NHS Trust, March 1999

Incomes	%
Health Authorities	69
GP Fundholders	17
Other	4
Income from Core Activities	90
Income from Other Activities	10
Total Income	100

Expenses	%
Staff Costs	65
Supplies/Services	20
Depreciation/Premises	12
Miscellaneous	3
Total Expenditure	100
Operating Surplus	(+) 6

The trust has its management structure divided into 25 clinical directorates. Almost all of those directorates have a directorate manager supporting the clinical director as well. The staff of MENOR NHS Trust is set out in Table 8.4.

Table 8.4 – Staff numbers in MENOR NHS Trust, March 1999

Medical and Dental	160
Administration and Estates	368
Healthcare and Assistants	415
Nursing Staff	510
Prof/Technical	237
Total	1690

MENOR NHS Trust is a well positioned hospital in terms of the National Reference Cost Index as well and it is considerably close to just other 2 acute hospitals.

Like all NHS Trusts, MAIOR and MENOR Trusts receive income from several sources – the largest of which are Health Authorities and Primary Care Groups at about 70% of total income. The GP Fundholding scheme has been replaced by Primary Care Groups. Accounting for more than 50% of expenditure, staff costs are by far the largest item of expenditure (discussed in Chapter 2).

8.1.3 The BIGGER Public Hospital in Brazil

The BIGGER Public Hospital is a main acute hospital and 24-hour accident and emergency departments. It has an income from activities of more than R$ 20 million[3] (see Table 8.5) and about 2300 employees. This hospital is located in a large conurbation and it has over 500 beds.

[3] The figures were obtained from secondary data provided by the hospitals, State and Municipal secretariats. £ 1.00 = R$ 2.99 (average in December 1999), source: http://www.oanda.com/convert/fxhistory.

Table 8.5 – Income/expenses of BIGGER Public Hospital, December 1999

Incomes[4]	%
AIH (Hospital Stay Authorization)	77
UCA (Ambulatory Care Units)	23
Total Income	100

Expenses	%
Staff Costs	72
Supplies/Services	21
Depreciation/Premises	0
Miscellaneous	7
Total Expenditure	100
Operating Difference	(-) 61

Obs.: State and Municipal treasures cover the difference, as discussed in Chapter 3.

The hospital management structure is basically divided as are other Brazilian public hospitals into two lines from the top: clinical and administrative. These structures are headed by a clinical and an administrative directors and are functionally structured in line and sometimes independently administered. In terms of type of employment, Brazilian public hospitals have civil servants and directly employed staff (discussed in Chapter 3). The staff of BIGGER Public Hospital set out in Table 8.6.

Table 8.6 – Staff numbers in BIGGER Public Hospital, December 1999

Civil Servants	1370
Contracted	960
Total	2330

It is considered a well positioned hospital in terms of cost information. The system started in 1996. This hospital is geographically located in an area that covers 6 hospitals, public and private.

8.1.4 The SMALLER Public Hospital in Brazil

The SMALLER Public Hospital is a main acute hospital and 24-hour accident and emergency departments as well. It has an income from activities of more than R$ 4 million (see Table 8.7) and about 1200 employees. This hospital is located in a large conurbation and it has less than 500 beds.

[4] Discussed in Chapter 3, section 3.3.2.

Table 8.7 – Income/expenses of SMALLER Public Hospital, December 1999

Income	%
AIH (Hospital Stay Authorization)	73
UCA (Ambulatory Care Units)	27
Total Income	100

Expenses	%
Staff Costs	74
Supplies/Services	15
Depreciation/Premises	1
Miscellaneous	10
Total Expenditure	100
Operating Difference	(-) 80

Obs.: State and Municipal treasures cover the difference, see Chapter 3.

The hospital structure, as all other Brazilian public hospitals, is basically divided into two lines from the top: clinical and administrative. These structures are also headed by a clinical and an administrative directors and are functionally structured in line. The staff of SMALLER Public Hospital in terms of employment contract is set out in Table 8.8.

Table 8.8 – Staff numbers in SMALLER Public Hospital, December 1999

Civil servants	437
Contracted	800
Total	1237

It is also considered a well positioned hospital in terms of cost information system. It has started its process in 1998. This hospital is geographically isolated from other hospitals, public and private.

Like all Brazilian public hospitals, BIGGER and SMALLER receive income in DRG-like fee for service provided from the Central Government. The largest (70%) comes in the form of AIHs. Federal, State and Municipal authorities cover the staff costs of the civil servants. The contracted staff is administratively flexible and, frequently, the hospital pays for it with its own resources. Accounting for more than 70% of expenditure, like in Great Britain, staff costs (civil servants and directly contracted) are by far the largest item of expenditure (see Chapter 3).

8.1.5 Planning and control processes in British hospitals

The NHS demands from Trusts a periodical long-term plan. Having certain directives being established by the NHS, Trusts automatically start internal planning processes. These processes can differ from trust to trust, however the incidence of the main elements of planning could be

observed, e.g. the presence of objectives and predictive models. Given contingent factors such as governmental policies, it is important to highlight that the idea of competition was taken very seriously by Trusts.

Strong evidence is given by the MAIOR Trust where an interviewed manager referred to the

> "Business Planning System" (MAIOR, AMM7, Human Resources)

that uses SWOT analysis like commercial companies considering the description given by the managers. This is not an isolated action within the hospital given that managers know the system and work in accordance with it. Department planning processes reflect this overall plan:

> "Our planning process is based upon the business plan of our hospital" (MENOR, CMM4, Trauma and Orthopaedics)

There is no doubt that this line of action contributed to the development of planning and control processes, because they are focused in the private sector. It is interesting to note that the MAIOR Trust has made other forms of investment providing contingent adaptability, clearly seeking competition and profit making, for example:

> "we generate income in catering ... have an income stream for car parking ... have an incinerator that burns all the clinical waste that we generate with another trust and then I ... import waste from other areas and I charge for that ... we have our own workforce and there is a small trust in Solihull and we contract for their estate services. That's another means of income. We also make some income on some of the residencies that we have or nurses homes, things like that. I've also recently leased another property, private property ... which are set up for nurse accommodation" (MAIOR, AMM5, Facilities).

Even market principles are applied

> "Now, I haven't filled that with nurses from our trust, so I've advertised to other Trusts at the moment to see." (MAIOR, AMM5, Facilities)

Due to market orientation, the cost information plays important role in the planning process. It is used to benchmark prices of products emphasising competition. A manager said

> "So that's how we manage things on the cost information. If I just say a little bit more how we compared ourselves with other Trusts. The benchmarking exercise was carried out by a company called KPMG, which you may've heard of, and, at the time when we did this which was about just over a year ago, there were twenty-four Trusts in that group. ... This is sort of commercial confidence – I've had to pay many thousands of pounds just to get this so you'll have to be careful where you mention these. Because by me joining this benchmarking club, I provide them with all our statistics and some of it could be good to competitors because now in the health service we do actually compete with other Trusts on how our prices are." (MAIOR, AMM2, Supplies/consumables)

This 'benchmarking club' started with 24 members and has reached 56 at the time of the interview. This does not involve all NHS Trusts, however, this suggests that major explanatory contingent factors such as governmental policies, e.g. involving competition and co-operation, are interpreted and re-interpreted within hospitals and generate different meanings between managers (discussed in chapters 2 and 4). This enthusiasm was not perceived only between

administrative managers. There is a collective approach to these perspectives. British healthcare system seems to consider that functionalism and interpretativism are parts of the middle management mediation role. Surely, some of them declared explicitly the intention to use cost information to develop clinical treatment, which involves and integration of both modes of governance and shared knowledge (managerial and clinical).

It can be said that the introduction of competition in the first instance caused a deviation in the way of managerial thinking, at least, in terms of the administrator's thinking however, as seen in the previous chapter, there is low uncertainty about objectives and cause and effect relationships within British hospitals. A manager confirmed this point

> "Because at the end of the day, that's what we're all here for, we're here to treat patients. I think that we can't forget that. We get busy with so many activities that from my point of view we are quite remote from direct patient care. A lot of my staff deal with them on a day-to-day basis but we're not in the frontline in treating patients at all. But as a trust that's how we try to handle that." (MAIOR, AMM2, Supplies/consumables)

The MENOR Trust seems to interpret external policies such as the stated commercialisation in a more moderate way. This is explained, to some extent, by the lack of opportunity. However it also has internal planning processes linked to the overall plan.

Therefore, comparatively, the planning process is well defined and structured in Great Britain demonstrating a contingent and circumstantial adaptability. This work is not discussing the validity of objectives sought, cause/effect relationships or predictive models used, however it is valuable to say that the planning process is a known process for both modes of governance, i.e. clan and hierarchy. British managers present, comparatively, lower degrees of goal incongruence and ambiguity of cause/effect relationships. They should participate to build up the final instrument or strategy for decision-making together. They also support and share responsibilities and objectives within areas. These areas present a configuration that suggests an M-form structure (Thompson et al., 1991). Even though it cannot be asserted that in Great Britain this arrangement was introduced to simulate a capital market within a bureaucratic framework, this was done seeking for superior efficiency (Ouchi, 1980). According to what was described above, hospitals' managers are integrated, in one time posing elements to be incorporated in a bottom-up planning scheme and, in another, discussing facts that came in a top-down planning scheme. This favours a discussion about task instrumentality, which certainly contributes to decrease the degree of ambiguity of performance measurement and encourage congruent managerial behaviour.

In this case, it is not surprising that structured planning reproduced structured control processes. The mentioned activities and control characteristics are impressive. The control process is functionally applied and also divided into areas. There is a convincing scheme of control within Trusts. A manager described it as follows

> "the planning process is controlled. ... as we go through the year, ... we have a structure of boards – clinical boards. We've got three boards. We've got a board of medicine, a board of surgery, a board of clinical services.
>
> This board is supposed to oversee the development, progress, performance of the directorates within those boards. ... So there's that ongoing monitoring that that board meets monthly. So, then I'll have a look at the financial performance of each directorate and if it's going off at a bit of a tangent, then we'll actually say to the clinical director or directorate manager, "What's happened here?" "You're not keeping within your budget", for example.
>
> In addition to that, what we have as well is what's called a 'hospital management committee' which meets monthly and, every month, they get a breakdown of performance – financial performance, quality performance, human resources performance ... each of the directorates. So that's a trust-wide committee, looking across the trust.
>
> In addition to that, we've got a finance committee that looks specifically at finance ...
>
> So, all the way through the year, the trust will know how each area is performing and that's how we control processes. We can identify pretty quickly if there's a problem and then identify what that problem is and then take steps to remedy it." (MAIOR, AMM7, Human Resources)

Therefore, the hierarchical structure of control can be defined as being: boards, management committee and specific committees. Furthermore, control panels can be installed to establish new mechanisms of control. Cross checking this information with other managers, this structure was confirmed. This mentality of control certainly causes a restriction in terms of opportunism that could emerge in hospital management and completeness in beliefs about cause/effect knowledge. This study cannot test whether these structures of control work according to hospital general objectives. However, it is possible to assert that there is a strong technology or scheme in terms of planning and control within British NHS Trusts.

There are differences in terms of planning and control between managers of different backgrounds, i.e. clinicians and administrative managers. All reasons corroborate the point of the complex rationality (discussed in Chapter 5) that also emerges from the contact between doctors and patients. This causes severe damage to any attempt of operational control (Anthony, 1965), because it is defined considering an objectively rational decision-making (Simon, 1976). Surely, from this contact emerges the 'imperfections' of the 'transformation process' and probable incompleteness of the knowledge of task instrumentality. A manager stated the stark difference between different rationalities at intermediate level:

> "I think what happens is it's a far more subjective process – an internal process that they're going through. As a manager, I'm conscious that what they have is a lot of competing demands, and conflicting priorities.

> So what you can have is a control process that looks after the money. You can have a control process that looks after the people side of it." (MAIOR, AMM5, Facilities)

The planning and control differences influenced by different rationalities are reflected in the use of cost information, budget for example:

> "Clinicians have more tensions and conflicts inherently in their role than somebody who is two steps removed from that front-line service. I think that's fair to say. Which is perfectly understandable and, you know, is absolutely right because they've got the patients' interests at heart and it can be frustrating. They think, 'Well, we could do so much more for the patients if we', you know, ..., 'if there was', ..., 'a much larger budget'." (MAIOR, AMM2, Supplies/consumables)

Given the contingent aspects, this fact should cause the mode of governance to use cost information in terms of provision of a better healthcare and provision of services, i.e. benchmarking of clinical activities, training clinic professionals among others. This will be tested in the next section.

8.1.6 Planning and control processes in Brazilian public hospitals

Contrasting with the high degree of structure of planning and control processes of British hospitals, Brazilian public hospitals do not have a planning process, that can be considered a contingent adaptability to major explanatory factors such as (lack of) governmental policies and uncertainty. Almost all managers asserted that hospital planning does not exist. It can be explained, to some extent, by the higher degree of uncertainty about objective/goals. Brazilian hospitals also experience different modes of governance acting simultaneously in uncertain and conveniently created circumstances. From this starting point, other reasons are given. The most used are the centralisation of the past, lack of administrative ability or interest of top managers. Certainly, opportunism is also a veiled reason for this. It was discussed that doctors within Brazilian hospitals can act as market members, which tolerate a higher degree of goal incongruence or clan members, which tolerate a higher degree of ambiguity in performance measurement. In such a situation, it is expected the emergence of a more ritual/symbolic form of management mediation role (Bourn and Ezammel, 1986). Brazilian managers consider the use of cost information as an important tool to materialise and strengthen the hierarchy as mode of governance.

There is no programme for training clinicians in management in Brazilian hospitals like in Great Britain. Also, there are no external or internal audits or any visible form of control. The presence of external bodies are not felt in managerial issues and top managers of public hospitals are nominated much more based on political criteria rather than competence:

> "Top managers change in accordance with the elections. Thus every six months before election we stop doing any form of management waiting for the new managers. When the new managers come in, they spend two years to start doing something because, usually, I do not know whether they are really meaning it, they say they are experiencing a phase of learning and knowing the hospital procedures" (BIGGER, AMM16, Human Resources)

The lack of administrative knowledge is real and interferes in the day-to-day middle management. Despite this, a manager of the SMALLER hospital posed that:

> "The planning process, when it occurs, it happens top down. It's something that they plan and we try to implement, we have all sorts of difficulties or we ignore it, because there was no effective participation of any department." (SMALLER, AMM8, Human Resources)

The lack of interest in the planning process is, to some extent, easy to understand. Planning demands objectives, which are considered ambiguous in Brazilian hospitals. This can be controlled and tested against foreseen goals and objectives that demands certain completeness of beliefs on cause/effect knowledge, which are not present in Brazilian hospitals. It seems reasonable to say that the market members or clan members, as discussed in previous chapter, are not interested in such line of thought. This is not mere speculation because a manager of BIGGER hospital said:

> "Look, there is no apparent reason for a planning process. All reasons are subjective. Rather than discuss what should be done, we have to do and work. There are queues out there and we have people to care for. Planning will just take time." (BIGGER, CMM9, X Ray)

The BIGGER and the SMALLER hospitals have clinicians as top managers and they are the majority on the board of directors. This certainly generates a top down line of actions that privileges the clan form of organisation in Brazilian public hospitals. This study is not interested to know the implications of lack of planning within hospital in terms of efficiency or performance measurement, however, it can be expected delays in decision-making, problem solving that can interfere with healthcare delivery. Thus, there are certain implicit advantages for this form of corporative structure, i.e. decreasing the degree of goal incongruence.

It cannot be denied that contingent factors such as the external policies and governmental bureaucracy contributes to absence of any form of planning processes in public hospitals. Funds are scarce and are not regularly passed according to a previous agreed schedule from the State and Municipal Health secretariats. It causes certain constraints. The point stated by a manager is illustrative

> "Basically, there is no long term planning. Everything is done accordingly to the circumstances. It does not resolve to plan, it is not accomplished. The State does not provide what is established. The funds are never as the amount stated in the budgeting process. It is always less than what was planned. This obligates us to divide and subdivide. This year budget was reduced almost 15%. It caused terrible problems for the supplies/consumables department." (SMALLER, AMM11, Costing)

It must be mentioned that other circumstances such as strikes in hospitals due to delays of payment of the salaries of the health professionals or underpayment have not been uncommon. These events have wide press coverage.

Certain contingent aspects such as (lack of) governmental policies and lack of overall planning process makes it impossible to find control processes within the hospitals given that they are intertwined. This causes a shift of planning and control processes to the lower levels of hospitals, which reinforces the importance of this study. Providing that these processes are known as a form of organisational adaptation to the environment (external and internal), it is possible to say that, in this way, Brazilian hospitals are adapting to the contingent circumstances. Therefore, planning and control processes within public hospitals in Brazil will emerge in the intermediate level management. It is important to say that goal incongruence, incompleteness of task instrumentality and imperfection of the knowledge of the transformation process are parts of this scenario. This point highlights some important situations.

First, several and independent forms of planning and control arise, which cause isolated decision-making. Each department should be considered a managerial island with particular objectives/goals and task instrumentality, i.e. beliefs about cause/effect knowledge (Macintosh, 1994; Drury, 2001). This arrangement could be considered, if planned and adequately managed, as an organisational development (see Emmanuel et al., 1993). However, given the circumstances already discussed, it can be considered an organisational disarrangement, which facilitates opportunistic behaviour. Contrasting with Great Britain, hospitals' departments in Brazil are still centralised in terms of decision-making. The managerial consequences are predictable in such a situation. The increase in the informal links of relationship and influence is certainly the most visible in Brazilian public hospitals. Circumstances such as the proliferation of objectives/goals, an increasing degree of goal incongruence combined with a high degree of ambiguity in performance measurement form the basis for the emergence of different modes of governance within Brazilian hospitals. This also causes a dispute of power, in which, the clan can be considered stronger. They have powerful arguments

> "they come here and say, if you do not do this or do not do that, the patient will die and it would be your fault. At the beginning it scared me, but now, I am used to it. So, I don't mind." (BIGGER, AMM5, Supplies/consumables)

This shows how strong are the arguments used by clan members and how far they can go, despite the apparent disdain from the manager. This disdain can be explained by the fact that this manager has also said in the interview that he has privileges (*carte blanche*) with the Board of Directors.

The located form of planning and control is visible in several departments. They have local objectives and predictive models that include, for example, all sorts of events, summer, football games, and carnival. However, several departments use forms based on past experiences, that is explained by the contingent adaptability. A manager posed that:

> "... in this sector we operate as from father to son. Because who knows how to manage it, teaches the next one and then, when he retires he suggests the name of the trained person to replace him. I have never seen a refusal of such a suggestion." (BIGGER, AMM5, Supplies/consumables)

In terms of managerialism, administrative managers are capable of applying more planning instruments. There is not a policy of training in Brazilian hospitals. Clinicians take the role of managers by their own, without any previous preparation or training.

Second, the medical clan creates mechanisms to break norms. Some managers admit the medical resistance in listen to other person than another clinician. Older clinicians have more difficulties because they are more accustomed to the installed form of organisations. A clinical manager admitted this point

> "Doctors are resistant to follow protocols, this is a strong difference. Sometimes, he is using a contrast, 80 ml, with a patient type X and Y years old. Then, someone else needs to use the contrast, with very similar characteristic, he says, use 83 ml to the nurse because in this case it is 83 ml. This is because he thinks he has power. It is not right but he does this to keep the power. This is a serious problem." (BIGGER, CMM9, X Ray)

It is clear the clinical freedom and the emergence of opportunistic behaviour in such circumstances. This explains certain medical resistance to accounting systems and, consequently, cost information. They seek to keep clinical freedom and clan control through maintaining high the degree of ambiguity in performance measurement and imperfection of the knowledge of the transformation process. A clinical manager asked

> "Why are you interested in cost? Health does not have a price." (BIGGER, CMM3, Casualties).

Despite the mistake between cost and price, it can be inferred that cost information threatens health. This was not an isolated statement. It can be said that clinical freedom in Brazilian Public hospitals is a serious obstacle, like in Great Britain in the 1980s (Bourn and Ezzamel, 1986) to make clinicians accountable for their actions. At the same time, this statement shows that clinicians will continue to employ strong arguments to avoid any form of interference in the already installed environment.

The control is executed locally as well. It is made in accordance to the execution of the planning process. Control can be considered a more primitive or elementary process. Due to the high amount of predictive models involved in planning processes, it cannot be mentioned any from of

generative learning. Adaptive learning would be possible considering experience factors, however, it is not possible to define the intensity and scope. Control in such a situation tends to be much more a ritual/symbolic action in Brazilian hospitals (Bourn and Ezzamel, 1986; Lapsley, 1993). The next section of this chapter explores planning and control mechanisms within hospitals in Great Britain and Brazil.

8.2 Hypotheses presentation

8.2.1 Items and variables statistical correlation

This study employs statistical techniques and models already applied by other researchers involving the use of accounting information in hospitals considering contingency theory in different countries (see, for example, Schweikart, 1986). This author investigated information usefulness and other variables correlated via Pearson's coefficient of correlation. Responses to items or questions relating to an overall variable were averaged to derive an overall score for that variable where is necessary (see Mak, 1989).

The objective of the co-relational study is to determine the strength of the relationship between two observations, items or variables (see, Stenvenson, 1986). The most common measure of "correlation" or "predictability" is Pearson's coefficient of correlation, even though many others exist (see, for example, Mak, 1989). Pearson's ***r***, as it is often symbolised, can have a value anywhere between -1 and 1. The larger the ***r***, ignoring sign, the stronger the association between the two variables or items and the more accurately you can predict one variable or item from knowledge of the other variable or item. At its extreme, a correlation of 1 or -1 means that the two variables are perfectly correlated, meaning that you can predict the values of one variable from the values of the other variable with perfect accuracy. At the other extreme, an r equal to zero implies an absence of a correlation, i.e., there is no relationship between the two items or variables. This implies that knowledge of one variable gives no information about what the value of the other variable is likely to be. The sign of the correlation implies the "direction" of the association. A positive correlation means that relatively high scores on one variable are paired with relatively high scores on the other variable, and low scores are paired with relatively low scores. On the other hand, a negative correlation means that relatively high scores on one variable are paired with relatively low scores on the other variable.

8.2.2 The interviews

This research sought to investigate the everyday reality in terms of the middle management mediation role within public hospitals. The focus of this part of the study is on key actors or influential persons (see Pettigrew, 1992) within hospitals to draw out their views on the process of management. This perspective recognises the potential for a significant impact of the interpretative approach (see Roberts and Scapens, 1985; Chapter 4) in the shaping and implementation of environmental influences. However, exploring the results of statistical correlation and the views of middle managers within these case studies settings, it was sought to achieve triangulation (see Jick, 1979, Miles and Huberman, 1994).

Findings are presented as a narrative (see Sayer, 1992) that illustrates, clarifies, analyses, describes and interprets the experiences of the middle management mediation role within hospitals. It seeks to discuss an overview of management's perceptions and the use of cost information in planning and control. Other researchers before have also employed this strategy, i.e. the use of triangulation to present an overview of management's perceptions, and role of accounting, in the management of hospital Trusts (see, for example, Ellwood, 1996c; Lapsley et al., 1998).

8.2.3 Hypotheses related to Great Britain

The discussion above showed that British managers assumed the market mechanisms and started exploring commercial opportunities of the Trusts. Therefore the middle management mediation role was compatible, to some extent, to environmental impositions and influences. After the market situation and, consequently, competition came the incentive for the use of cost information for comparison emphasizing co-operation and clinical development. The first group of hypotheses study this situation.

1. Clinicians' involvement in planning and control and the use of cost information in planning and control

As discussed in Chapter 2, the British Government has implemented national policies and emphasizes the use of cost information as a tool for benchmarking between hospitals. Benchmarking is referred to as being a managerial technology able to promote, among others, clinical improvement within Trusts. The medical body or clan currently dominates hospitals'

services. These contingent factors or circumstances have, to some extent, increased the involvement of clinicians with the hierarchy, what caused the permeation of knowledge. Doctors' decisions are considered responsible for "about 80% of hospital expenditure" (Ashmos et al., 1998, p.5). They are occupying posts of middle management.

Thus, it is important to test the response of clinicians (as managers) in planning and control and the expected use of cost information within hospitals, i.e. whether planning and control using cost information fits the environment (internal and external). Therefore:

H1: Clinicians involvement in planning and control, when using cost information, improves clinical development.

This hypothesis should be divided into two parts: first, clinicians involvement in planning, when using cost information improves clinical development and, second, clinicians involvement in control, when using cost information, improves clinical development.

The test of both parts showed a strong correlation between the clinician's involvement in planning and control and clinical development, i.e., respectively, 0.247 and 0.209 significant at 5%, therefore acceptable, see Table 8.9. Therefore, the data supports the hypothesis. In hospitals where 'planning is considered a clinicians' task', a positive correlation between the 'benchmarking of clinical activities' and 'training clinic professionals' is observed. In hospitals where 'control is considered a clinicians' task' can be observed a positive correlation with 'benchmarking of clinical activities' and 'improvement of clinical treatments'.

This hypothesis shows that clinicians as managers and clan members are carrying out their managerial functions towards external expectations. This was suggested by contingency theory and modes of governance. Clinicians as managers promote a decrease on the degree of ambiguity in performance measurement mainly through the reduction of the imperfection of knowledge of the transformation process within hospitals. This supports the fact that planning and control fit the environment for these managers. Corroborating this point, a manager explained in an interview that:

> "If you mean clinical results ..., yes. I see clinician managers discussing the efficiency of this or that activity or procedure instead of others, considering the final results of treatment. Then, if with equal or lower cost, the clinical procedure is improved, for the benefit of the patient, they start the procedures for the adoption of these activities." (MAIOR, CMM3, Elderly Medicine)

Table 8.9 – Correlation between the clinicians' involvement in planning and control and the use of cost information in control and planning

Q32. In this hospital ...	Q34. The use of cost information in control and planning within hospitals can provide:			
	Benchmarking of clinical activities (Q34a)	Improvement of clinical treatments (Q34c)	Training clinic professionals (Q34f)	(Q34)
Planning is a clinicians' task (Q32a)	0.224*	n.s.	0.223*	0.247*
Control is a clinicians' task (Q32c)	0.219*	0.212*	n.s.	0.209*

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Due to the narrative knowledge and complexity involved in clinical treatments, clinicians are free to discuss it between themselves (Tsoukas, 1995). Hospitals, in Great Britain, seem to emphasise this point involving clinicians with the administrative structure and managerial posts, and also training them. In this case the clan assumes the hierarchical form of organisation accepting an intermediary (medium) degree of goal incongruence, however reducing the degree of ambiguity of tasks involved and performance measurement. Managers interviewed in hospitals admitted this point:

> "Just because what happens in this hospital is that the managerial structure is done by clinicians. Thus, from the Chief Executive and below, ... the [managerial] structure of this hospital is in general lines: medicine, surgery and clinics, other services and facilities, all are headed by clinician managers [medical] and, below the medical managers you have other level of clinician managers and other managers are present in a lower level. Straight from the top, there is a culture that the clinicians have been naturally trained to become managers." (MAIOR, CMM3, Elderly Medicine)

> "I think, in the past, in the health service, I think that the clinicians were more opposed to the difficulties and practicalities ... you may well have thought that the clinicians are discussing about whatever we may not have been interested in, how impossible the business was for us, and we would never support the business ... Currently you will see that the clinicians are much more realistic and work to create 'efficiency' within the hospital. Oh yes! I mean, clinicians do manage things these days." (MENOR, AMM10, Estates)

Major explanatory contingent factors such as governmental policies certainly contributed to it.

Some coherence of managerial behaviour can be observed when the correlation of the variable 'planning is a clinicians' task' is significantly correlated with 'training clinic professionals', because it is essentially a more long-term action and not simply pragmatic, but it is not significantly correlated with 'improvement of clinical treatments'. It can be said that when training of clinicians has occurred they are more likely to regard planning and control as part of their managerial role. Similarly, the variable 'control is a clinicians' task' is significantly related with 'improvement of clinical treatments' but it is not significantly correlated with 'training clinical professionals' maybe because it is essentially more pragmatic, see Table 8.9.

2. The observation of goals and the use of cost information in planning and control

The literature also showed the presence of different actors negotiating within hospitals, see Chapter 4. Those actors can be considered as individuals, as areas/sectors and as the clan and the

hierarchy. There is a composition of activities or 'means' and outputs or 'ends' coming up from this composition of interests and relationships. Nonetheless, they are supposed to act according to organisational goals and, goal congruence should improve the benefits of the use of cost information within hospitals. Overall goals promote internal consistency. It is accepted that an agreed set of goals result in feasible regions of activity, i.e. feasible region of intersecting acceptable sets of actions (Emmanuel et al., 1993). Accounting information has a role to play in maintaining decision-makers commitment to this region. Thus, the study of the response of these actors, in Great Britain, is deemed to be important in terms of benefits to the organisation when using cost information in control and planning within hospitals. Overall goals promote and are essential for internal consistency. Therefore, when hospital managers are planning or controlling:

H2a: The more 'individuals pursue similar goals', the more the applicability of cost information in control and planning within hospitals.

H2b: The more 'clinicians pursue similar goals', the more the applicability of cost information in control and planning within hospitals.

H2c: The more 'administrators pursue similar goals', the more the applicability of cost information in control and planning within hospitals.

H2d: The more 'clinicians and administrators pursue similar goals', the more the applicability of cost information in control and planning within hospitals.

H2e: The more 'the hospital's goals are known and observed', the more the applicability of cost information in control and planning within hospitals.

All results of hypotheses testing are presented together in the Table 8.10. It shows that *H2a*, *H2c* and *H2d* have non-significant results. Therefore, they should be rejected. Taking the *H2a*, the variable 'individuals pursue similar goals' is only significantly correlated with 'improvement of clinical treatments'. In *H2c*, the variable 'administrators pursue similar goals' is significantly related with 'reduce resource consumption' and 'cost reduction'. Finally, in *H2d*, the same was observed for the variable 'clinicians and administrators pursue similar goals". The explanation, to some extent, reside in the fact that hospitals, due to their nature and services provided or yet specific 'transformation' processes, must involve clan members in the hierarchical form of organisation. Hypotheses involving members of different organisations were not supported.

Table 8.10 shows that *H2b* (0.308 and significance at 1%) and *H2e* (0.270 and significance at 5%) are supported by the data. Furthermore, deriving *H2b*, the variable 'clinicians pursue similar goals' presented significant correlation with the use of cost information in planning and control to 'improve clinical treatment', 'reduce resource consumption', 'cost reduction', 'training clinic professionals', 'training administrative professionals'. This is explained, to some extent, by the presence of narrative knowledge, which permits to reduce the incompleteness of task instrumentality, i.e. beliefs about cause/effect relationships (Tsoukas, 1995). Therefore, it is possible to infer that clan members in the hierarchy are committed to feasible regions of activity. In turn, the variable 'the hospital's goals are known and observed' presented significant correlation with the use of cost information for 'benchmarking of clinical activities', 'clinical activity progress', 'reduce resource consumption', 'cost reduction'. It is not surprisingly once overall objective/goals are understood as being able to promote internal consistency, which, in turn, encourage congruent behaviour.

Table 8.10 – Correlation between observation of goals and the use of cost information in control and planning

Q33. When hospital managers are planning or controlling, you agree that	Q34. The use of cost information in control and planning within hospitals can provide:							
	Benchmarking of clinical activities (Q34a)	Clinical activity progress (Q34b)	Improvement of clinical treatments (Q34c)	Reduction of resource consumption (Q34d)	Cost reduction (Q34e)	Training clinic professionals (Q34f)	Training administrative professionals (Q34g)	(Q34)
H2a. Individuals pursue similar goals (Q33a)	n.s.	n.s.	0.207*	n.s.	n.s.	n.s.	n.s.	n.s.
H2b. Clinicians pursue similar goals (Q33b)	n.s.	n.s.	0.221*	0.250*	0.260*	0.243*	0.318**	0.308**
H2c. Administrators pursue similar goals (Q33c)	n.s.	n.s.	n.s.	0.254*	0.233*	n.s.	n.s.	n.s.
H2d. Clinicians and administrators pursue similar goals (Q33d)	n.s.	n.s.	n.s.	0.251*	0.266*	n.s.	n.s.	n.s.
H2e. The hospital's goals are known and observed (Q33e)	0.249*	0.244*	n.s.	0.246*	0.283**	n.s.	n.s.	0.270*

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

The dispute between the clan and the hierarchy within hospitals is well known (see Chapter 2, section 2.2). However, interviews with British managers showed that this division between clinicians and administrators would be artificial and, therefore, all situations are conducted in accordance to a common desired end. This contingent adaptability is important because it means

a form of mitigation of possible differences between the clan and hierarchy as modes of governance. They defended the presence of a team:

> "Well, planning ... of course we do such things, of this kind, as a team. Then I would say that you are supported by the people who are going outside to sell our services or to see what ... the Health Authorities want to buy. Accountants who elaborate the cost of services for us support them. We are then liable internally and set groups to start recruiting, to start the search for the necessary equipments to provide the service. It is a team; it is too great the effort of a team here, instead of being involved and doing everything on your own, no way." (MAIOR, AMM2, Supplies/consumables)

> "When I make a decision within a committee about what we are going to do, then it will become a kind of a project that a team will accomplish." (MAIOR, AMM5, Facilities)

This 'team' can be understood as result of the influence posed by managers with an administrative background and certainly it is a reflex of governmental policies, e.g. management budgeting. In Table 8.10, it is noticeable that the observation 'administrators pursuing similar goals' showed significant correlation with items that can be considered more elementary and objectively rational, i.e., the use of cost information for 'reduce resource consumption' and 'cost reduction'. The same remark is valid for the variable 'clinicians and administrators pursue similar goals'.

It is important to notice that, despite the assertions indicating teams of administrators and clinicians, and common planning and control, clinical managers are the majority at all levels of the organisation and they are predominant in the hierarchical structure. Also, they have been trained in management. Interviewed managers illustrate these points:

> "Yes, but I don't think that you can actually divide the two, not in this hospital. Just because what happens in this hospital is that the managerial structure is done by clinicians." (MAIOR, CMM3, Elderly Medicine)

> "I think so. I think they do it now [planning and control]. If they didn't I think they wouldn't survive in the health service nowadays. I think that there has been a strong re-education process." (MENOR, CMM4, Trauma and Orthopaedics)

Indeed, this facilitates the formation of teams and, consequently, the integration of both modes of governance. It is a known fact that the knowledge is still not shared between modes of governance within hospitals. However, clan members are carrying the knowledge to the hierarchy, this reduces the ambiguity in terms of performance measurement and, consequently, restrains opportunistic behaviour in the organisation.

3. Influential forces and the applicability of cost information in planning and control

This research is also interested in the study of certain influential forces acting when British managers are planning. These forces should be tested against the applicability of cost

information in planning and control. Thus, when managers are planning, the influencing capacity of:

H3a: The 'manager's background' is likely to be positively related with the applicability of cost information in control and planning within hospitals.

H3b: The 'organisational objective' is likely to be positively related with the applicability of cost information in control and planning within hospitals.

H3c: The 'public objectives' are likely to be positively related with the applicability of cost information in control and planning within hospitals.

H3d: The 'objective of the area/sector' is likely to be positively related with the applicability of cost information in control and planning within hospitals.

Table 8.11 – Correlation between influential forces and the applicability of cost information in control and planning

Q31. When you are planning, please characterise the influencing capacity of:	Q34. The use of cost information in control and planning within hospitals can provide:							
	Benchmarking of clinical activities (Q34a)	Clinical activity progress (Q34b)	Improvement of clinical treatments (Q34c)	Reduction of resource consumption (Q34d)	Cost reduction (Q34e)	Training clinic professionals (Q34f)	Trainning administrative professionals (Q34g)	(Q34)
H3a. Your background (Q31a)	0.304**	n.s.	n.s.	n.s.	0.262*	n.s.	n.s.	0.210*
H3b. Organisational Objective (Q31b)	n.s.	0.483**	0.281**	n.s.	n.s.	n.s.	n.s.	0.247*
H3c. Public objectives (Q31c)	n.s.	0.359**	0.321**	0.240*	n.s.	n.s.	n.s.	0.321*
H3d. Objective of the area/sector (Q31d)	n.s.	0.311**	0.305**	n.s.	n.s.	0.253*	0.351**	0.328**

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Table 8.11 shows that *H3a*, *H3b*, *H3c*; with respectively 0.21, 0.247, 0.321 significant at 5%; and *H3d*; 0.328 significant at 1%; are supported by the data. In *H3a*, the variable 'manager's background' was observed as having the weakest association with the application of cost information in planning and control within hospitals. When derived, this variable showed positive correlation with the applicability of cost information for 'benchmarking clinical activities' and 'cost reduction'. In *H3d*, the variable 'objective of the area/sector' presented the strongest association with the applicability of cost information. When fragmented, it could be

observed that, this variable presented significant correlation with the applicability of cost information for 'clinical activity progress', 'improvement of clinical treatments', 'training clinic professionals' and 'training administrative professionals'.

As shown below, managers stated that, in a coherent way with Table 8.11 above, some explanatory factors are closely considered when planning and controlling. It is important to observe that all influential forces considered or major explanatory factors were positively related with the use of cost information in control and planning. These contingent factors seemed to be involved in the general planning processes within the hospital. This general planning process evolved in different ways within the hospital, i.e. top-down and bottom-up. The SWOT analysis interrelates contingent factors and organisational objectives with external demands or threats and opportunities. The objectives of the organisation are considered in relation to the objectives of area/sector presented, for example, as directorates and the public.

> "Yes, the system we had in the Trust, we call it Business Planning System, and the way it works is that each year, around January, February, every Directorate ...
> The managers within these Directorates are lead to perform what we call SWOT Analysis. ...
> Then, they must look at their services and say 'Ok, what threats are there on the horizon? What opportunities are there to improve the service?' Yes, this is the reason why they go through this 4 part model, called SWOT Analysis." (MAIOR, AMM7, Human Resources)

> "They may start plans that fall out of this Business Plan. The general Business Plan observes the Directorate position, what it needs to do in the future so as to continue to be a success, then they are going to set a plan of working force to deal with the resource element, that is the one I am involved with, the Financial Plan, which, as I told you some time ago, is also a Plan of Quality in which we are going to stop and look, 'Well, what is the impact of increasing the number of staff people and reducing the Waiting List in the Outpatient Department?'" (MAIOR, AMM7, Human Resources)

The presence of the objectives of the area/sector is considered as parts or a basis to develop an overall plan. This is a bottom-up planning process:

> "Then they document it in a format, that is the Business Plan or those Directorates' Business Plans are centralised and from that we work out a general Business Plan for the Trust as a whole." (MAIOR, AMM2, Supplies/consumables)

The community, or public objectives, are considered in terms of planning. This is presented in forms of service, such as ophthalmology:

> "Then, overall, we are improving the service patterns for the community in, say, ophthalmology, for instance, or any other. Then that is how we work out plans for the Trust." (MAIOR, AMM5, Facilities)

Therefore, it can be said that British hospital managers have in mind an integrated set of objectives when controlling and planning. This common and shared scenario certainly encourages congruent behaviour and commitment to the feasible region of intersecting, acceptable sets of actions. This can be well explored by the use of a structured tool or model such as the SWOT analysis.

This part tested planning and control as clinicians' task, goals and types of influence related to the use of cost information in strategies that employs rationality and complex rationalities within hospitals. British clinical managers' planning and control fits the environment (internal and external). At the same time overall goals are observed providing general gains to the hospitals.

It is important to note that the amalgamation of environmental factors and modes of governance suggested in this research was supported through the data gathered in Great Britain and discussed in this section. Three points should be highlighted. Firstly, the hypotheses related to Great Britain have shown that clinicians have assumed planning and control responsibilities within hospitals, mainly related to benchmarking clinical activities, improvement of clinical treatments and training clinic professionals. This objective has been pursued since the Griffiths' Report and subsequently, RMI; applied within the hospitals; and then the internal market and co-operative networks; applied between the hospital and external bodies. Thus, it was supported that these managerial functions were assumed as clinicians' tasks and have used cost information to improve healthcare provision. The involvement of clinicians with the hierarchy make the knowledge (managerial and clinical) common to both modes of governance, that reduced the degree of ambiguity in performance measurement and opportunism. Also, interviews showed that the barriers between the clan and hierarchy have been mitigated.

Secondly, clinicians pursuing similar goals and the hospital's goals being known and observed are supportive to organizational general gains. This also means a lower degree of goal incongruence, which cause a movement in direction of the hierarchy. These gains involve benchmarking of clinical activity, clinical activity progress, improvement of clinical treatments, reduction of resource consumption, cost cutting, training clinic professionals and training administrative professionals. It is interesting because other likely correlations were not supported, i.e. individuals or administrators pursuing similar goals. This suggests that hospital's progress is seated on two bases: clinical domain and general objectives. This is explained, to some extent, by the understanding of the prescriptive and descriptive processes (Tsoukas, 1995), which certainly contributes to decrease the incompleteness of beliefs about cause/effect knowledge (Drury, 2001) and, as said before, contributes to reduce opportunism. These points reinforce the fact that the use of cost information provides basis to a coherent behaviour in the presence of coherent objectives.

Thirdly, hospital's progress in terms of healthcare provision depends upon a group of influencing characteristics or major explanatory contingent factors. Among them can be cited: background,

organisational objective, objective of the public and objective of the area/sector. It is interesting that the objective of the area/sector can be considered the greatest contributor. An explanation is given by the fact of areas, groups or sectors being considered decentralised units for a long time. It is followed by public objectives. However, it is important to highlight that these major factors are considered together when using cost information for control and planning. This will give basis for congruent behaviour, keeping the managers committed to the feasible region of activity.

8.2.4 Hypotheses related to Great Britain and Brazil

4. Time spent with planning and control and assessment of this time

Planning and control within hospitals can be considered as different functions and they have their own importance, discussed in Chapter 5. Managers in both countries should perform planning and control and they should consider the time they spent in doing it as being adequate. Therefore, the hypotheses below were tested.

Table 8.12 shows that *H4* is supported by the data in both Great Britain (0.437) and Brazil (0.419) with significant correlation at 0.01 level. *H5* presented a non-significant correlation in both countries. Managers of both countries associate the more the time they spend planning, with the more it is considered as being adequate. The same does not apply for the time they spend controlling.

Table 8.12 – Correlation between time spent with planning and control and judgement of time adequacy

Hypotheses	GB	Br
H4: The more the time spent with managerial planning, the more the judgement of this time as being adequate. (Q6a and Q7a)	(0.437 **)	(0.419 **)
H5: The more the time spent with managerial control, the more the judgement of this time as being adequate. (Q6b and Q7b)	(0.141) n.s.	(0.797) n.s.

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

This is interesting because it means that more dedication to the planning process is considered appropriate in that case. The same does not apply to control. This suggests that managers do not consider these processes similarly. Also, it is possible to infer that control processes are time consuming and managers are getting less involved with it.

5. Correlation between application of phase theorem in planning and control

Another important point is to find out whether the application of phase theorem in planning is reflected in control. The phase theorem and programmed decision-making mean low uncertainty

involving cause/effect relationships, which contributes to decrease ambiguity in performance measurement. It is expected that this possible correlation can be reproduced in specific areas such as supplies/consumables. Therefore, the following hypotheses (*H6a* and *H6b*) were tested.

Table 8.13 showed strong and positive correlation between the presence of phase theorem in planning, i.e. 0.490 in Great Britain and 0.453 in Brazil, both are significant at 0.01 level, and control. This supports the idea that the knowledge of all steps/procedures for decision-making/problem solving when planning is associated with the same situation for control. In managerial terms this facilitates and reflects association between planning and control. The same Table 8.13 also shows that the correlation is also significant (at the 0.01 level) for planning and control of supplies/consumables. This reflects the fact that when the planning process is structured, the control process can also be structured. This does not mean that planning and control processes are structured in both countries. Comparatively, as discussed before, these processes are more structured in British hospitals.

Table 8.13 – Correlation between application of phase theorem in planning and control

Hypotheses	GB	Br
H6a: The more the application of phase theorem when planning, the more the application of phase theorem when controlling. (Q24 and Q30)	(0.490 **)	(0.453 **)
H6b: The application of phase theorem in decision making/problem solving for managerial planning of supplies/consumables is likely to be positively related to the application of phase theorem for managerial control of supplies/consumables. (Q24a and Q30a)	(0.377 **)	(0.432 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Unstructured problems or non-programmed decision-making are treated differently in Great Britain and Brazil and this will reflect in the use of a more cybernetic and non-cybernetic forms of control discussed ahead in this section. There is a clear strategy to transform non-structured into structured decision-making in Great Britain. In Brazil, this process follows a fuzzy logic, which means that a solution is not guaranteed at the end. Considering the discussion in terms of overall planning and control processes within hospitals in the first section of this chapter this is not a surprise.

In Great Britain, the strong association between the presence of phase theorem in planning and control does not represent the totality of the managerial process. When the problem is unstructured or the phase theorem cannot be directly applied, the solution can come through the creation of internal strategies, e.g. control panels or commissions to tackle the situation (discussed in section 8.1.5). Thus the phase theorem is explored and obtained again encapsulating the problem. This exemplifies the search for the decrease of incompleteness of

beliefs on cause/effect knowledge. This will reduce opportunism and facilitate the integration of the clan and the hierarchy. Also, this will, to some extent, decrease the ambiguity in performance measurements. An interviewed manager talked directly about this subject:

> "The committee noticed that the budget, the expenditure with the personnel bank or agency was increasing. Now, we actually had nurse vacancies that were being reduced. Then, if you have fewer vacancies you must use fewer personnel from the bank or agency. Then we said: 'Wait, there is a problem here'. Then what happened is that we had a Control Bank or Agency Panel to study the problem that was coordinated by myself and supported by the operation directors." (MAIOR, AMM7, Human Resources)

British managers either have a decentralised structure that permits local decisions or they have well-structured processes. It is important because the use of cost information is part of the process. Comparatively to Brazilian managers, they have more managerial tools to help them in the decision-making/problem solving process, e.g. risk assessment:

> "... only when we have problems, anything concerning capital development or any other, we use information about costs to solve the problem. We tend to use 'Risk Assessment' also, to determine whether anything is worthwhile to be done and, 'Value for Money', as though we were going to get money doing this. This way, Risk Assessment and Value for Money are common terms concerning problem solving, and I think that the costs become effective." (MENOR, CMM4, Trauma and Orthopaedics)

In Brazil, the non-structured problem or non-programmed decision-making is passed to the superior level and this does not mean that the problem will get solved, but that the problem should now be ignored in its origin. This has also been discussed in this thesis in the previous Chapter 7, i.e., Brazilian managers face a centralised structure in terms of decision-making, which does not necessarily mean solutions. Middle managers are only linked to routine decision-making and problem solving. This is what an interviewed manager in Brazil testified:

> "Within the surgery centre, there is a number of people with insertion in there: nurses, administration, the manager nurse and I, we try to work out decisions from there, now, simple decisions, I do it, decision for material request... These are not taken this way, but many times we ask for the board of directors' support, we still have remaining ties, we are not released from the board." (BIGGER, CMM9, X Ray)

In this case, Brazilian managers have a very limited vision of the organisation as a whole. This increases the degree of goal incongruence. Also, this located or departmental form of decision-making should not be considered a form of muddling through due to the lack of any incremental effect (Lindblom, 1973).

It must to be mentioned that, sometimes, the opposite takes place. Due to contingent factors in Brazil, the Board of Directors pass the unstructured problem down to the middle level to have it solved 'informally'. The process of borrowing supplies/consumables and equipments between hospitals is an example. In case of lack of any medication or medical instrument, the board of directors (administrative or clinical) ask the middle manager to sort it out. Also, an examination

of the process reveals that there is a complex course of action behind the solution, which is completely unstructured.

> "This way: they gave me full authority. I have *carte blanche* with the current board, from both the directors: X and Dr[5] Y I have *carte blanche* with them. Then, sometimes it is so: 'Hi, Z, how are we for the weekend?' I say: 'Dr Y, we have run out of this', and she/he says: 'Can you manage it for us?', so I say: 'Well, Dr. Y, there must be a way, yes. I will manage it'. Now, what I fear most is not to know what goods I am receiving today, but what I am going to receive today to pay for what I am getting." (BIGGER, AMM5, Supplies/consumables)
>
> "Negotiating with another public hospitals, and, ... other hospitals, yes, I have done this kind of thing to have ... I can have better things, as there is ... there is a better kind of goods too. They exchange with me. And pay the supplier outside ... so as there is no lack for nothing for the patient. So what we do in here is a snowball, understand? It makes a snowball, but afterwards you erase it, then it comes back again. Thus, so it is, it is helping hands.
>
> [Is this a verbal agreement, or not?] It is verbal. We do a voucher from hospital to hospital, from manager to manager, but it goes under our own name ..." (BIGGER, AMM5, Supplies/consumables)

Given contingent factors such as (lack of) governmental policies and uncertainty, it must be said that there is no possibility to structure this process, because it is irregular or not legal.

In summary, this situation reinforces that the clan and the hierarchy are, to some extent, integrated for the solution of non-structured problems or non-programmed decision-making in Great Britain. It seems that decentralisation does not interfere with the process of structuring non-structured problems. There are available techniques involved to help the hierarchy to cope with this situation and to promote contingent adaptability.

Brazilian hospital management is centralised. This does not mean solution to unstructured problems. It is important to notice that problems go up and down throughout the structure and this does not mean they get solved or structured. It is not possible to identify adaptive learning. Departments work independently, this certainly increases opportunistic behaviour and propitiates the emergence of different forms of control, planning.

6. Process elements and forms of control

Forms or types of control comprise a significant mechanism of identification of the process of planning and control. Types of control can be related with task instrumentality, i.e. beliefs about cause/effect knowledge (Drury, 2001). It also contributes to illuminate the 'transformation' process. These are important to understand adaptability to contingent factors. As posed before, this research is mainly interested in three specific hospital internal areas or processes, i.e.

[5] Clinical professionals in Brazil are treated as Dr.

supplies/consumables, human resource and equipment. Therefore, this part of this section discusses forms of control related to:

a. Material used (*H7* and *H7a*);
b. Professional involved (*H8* and *H8a*);
c. Equipment (*H9* and *H9a*), and;
d. Activities performed (*H10* and *H10a*).

These were tested for the two mechanisms of control. It was suggested, see Chapter 5, that control involves two general mechanisms to its development and adequate execution: cybernetic and non-cybernetic. Cybernetic mechanisms are related and applied to more standardised and formalised systems. In this case, contingent adaptability indicates lower uncertainty of cause/effect relationship and, consequently, lesser opportunism.

When internal complexity increases or systems become looser and less standardised, the non-cybernetic form of control emerges. In this case it is expected higher uncertainty of cause/effect relationship and more opportunistic behaviour. British managers are expected to be much more identified with cybernetic control than their Brazilian counterparts. Certainly, the lower degree of goal incongruence contributes to this situation. Also, comparatively, British hierarchical managers, because they are clan members, have higher ability to measure outputs. British managers have experienced a more coherent, rigorous and effective health policy making, which caused hospitals' internal systems to be more predictable in terms of cause/effect relationships. Other possible reasons would be the investment and a more predictable environment and organised external bodies. Also, clan members are involved in the hierarchy. Brazilian managers, in turn, have experienced a much more ad hoc and unpredictable situation. Opportunism has thrived within organisations were control is less structured due to higher uncertainty about cause/effect relationships. This contributes to understand major explanatory contingent factors. Therefore, it is considered important to test these expectations and the degree of association between these mechanisms and managerial control processes.

The cybernetic mechanism was associated with the variable 'studying the process'. The non-cybernetic mechanism was measured in terms of 'changing the predictive model' in the case of problems arising when controlling, see Chapter 5. They were tested against 'revision of the characteristics of the material used', 'revision of the characteristics of the professionals involved', 'revision of the characteristics of the equipment employed', and 'revision of the

characteristics of the activity'. Tables 8.14, 8.15, 8.16, and 8.17 show results of the hypotheses tested. Table 8.18 summarizes the findings.

Table 8.14 shows that there is a strong association between the variable 'characteristics of the material used' and the more cybernetic type of control in both countries (0.378 in Great Britain and 0.532 in Brazil significant at the 0.01 level). In Brazil, hospital managers also associate 'characteristics of the material used' with the more non-cybernetic type of control (0.297 significant at 0.01 level). In Great Britain, this association is not significant.

Table 8.14 – Correlation between characteristics of material used and forms of control

Hypotheses	GB	Br
H7: The revision of the characteristics of the material used is likely to be positively related to process control, in the case of control problems. (Q26a and Q25c)	(0.378 **)	(0.532 **)
H7a: The revision of the characteristics of the material used is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26a and Q25b)	(0.194) n.s.	(0.297 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Table 8.15 shows a strong association between the variable 'characteristics of the professionals involved' and the more cybernetic mechanism of control in both countries (0.382 in Great Britain and 0.507 in Brazil significant at 0.01 level). Brazilian managers displayed a positive correlation between the variable 'characteristics of the professionals involved' and the more non-cybernetic mechanism of control (0.242 significant at 0.01 level). British managers showed a positive, but not significant, relation between these variables as well.

Table 8.15 – Correlation between characteristics of the professionals involved and forms of control

Hypotheses	GB	Br
H8: The revision of the characteristics of the professionals involved is likely to be positively related to process control, in the case of control problems. (Q26b and Q25c)	(0.382 **)	(0.507 **)
H8a: The revision of the characteristics of the professionals involved is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26b and Q25b)	(0.117) n.s.	(0.242 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Table 8.16 shows that managers of both countries presented a significant and positive correlation between the variable 'characteristics of the equipment employed' and the more cybernetic form of control (0.340 in Great Britain and 0.464 in Brazil significant at 0.01 level). In this case, managers of both countries also presented a positive and significant correlation between 'characteristics of the equipment employed' and the more non-cybernetic mechanism of control (0.209 significant at 0.05 level in Great Britain and 0.377 significant at 0.01 level in Brazil).

Table 8.16 – Correlation between characteristics of the equipment employed and forms of control

Hypotheses	GB	Br
H9: The revision of the characteristics of the equipment employed is likely to be positively related to process control, in the case of control problems. (Q26c and Q25c)	(0.340 **)	(0.464 **)
H9a: The revision of the characteristics of the equipment employed is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26c and Q25b)	(0.209*)	(0.377**)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Finally, Table 8.17 reveals that managers of both countries posed a significant and positive correlation between the variable 'characteristics of the activity' and a more cybernetic mechanism of control (0.396 in Great Britain and 0.577 in Brazil significant at the 0.01 level). Brazilian managers associated 'characteristics of the activity' with a more non-cybernetic type of control (0.307 significant at 0.01 level). British managers do not support the correlation at a significant level.

Table 8.17 – Correlation between characteristics of the activity and forms of control

Hypotheses	GB	Br
H10: The revision of the characteristics of the activity is likely to be positively related to process control, in the case of control problems. (Q26d and Q25c)	(0.396**)	(0.577**)
H10a: The revision of the characteristics of the activity is likely to be positively related to control through changing the predictive model, in the case of control problems. (Q26d and Q25b)	(0.184) n.s.	(0.307**)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Table 8.18 summarizes these findings. It shows that Brazilian managers involve both cybernetic and non-cybernetic mechanisms of control in all studied processes, i.e. supplies/consumables, human resources and equipment. This provides strong evidence of lack of a central structure or line of action in terms of planning and control. In such circumstances, the knowledge is kept within the clan. There is also a higher imperfection of the knowledge of the process and lower ability to measure outputs, what supports the clan control (Ouchi, 1979; Drury, 2001). It is important to say that this is contingent to the environment (internal and external), i.e. more inconstant and unstructured processes, lower uncertainty of cause/effect relationships and higher uncertainty about congruent objectives. These circumstances support the presence of different forms of organisation within Brazilian hospitals and do not restrain opportunism and clinical freedom. This certainly reinforces the opportunistic behaviour. In Great Britain, the presence of non-cybernetic mechanisms of control was assigned only for 'characteristics of the equipment'. This is important, in this point, because of, if associated to the other variables, seems to be more related to worries about technological development. Comparatively, British managers have

demonstrated to be quite adjusted to the environmental factors (external and internal). There are more constant and structured processes, which restrains opportunism and clinical freedom.

It is important to point out that Brazilian managers have started studies seeking to change this situation. Processes are being mapped. This implies a certain degree of standardisation. It is also important to consider that clan members are involved, what contributes to decrease the degree of incompleteness of knowledge and, consequently, helps to decrease the degree of ambiguity in performance measurement. Due to the initial stage of cost information use, Brazilian managers seem to be starting a process of revision of activities or professionals involved in processes and they are using cost information to start this phase, as illustrated below:

> "We started to implant some indicators of production, of quality, to start systematically to discuss this with the sectors, the mechanisms we use, and then we got three procedures, asked them to perform a study about how the activity is done, how much the same activity costs in all the sectors within the hospital, and we found out that the three activities that could be optimised and have a band of acceptability, this band was extremely large, the same procedure might last 5 minutes or 50 minutes, the same procedure was performed by a nurse aid in one place, and by a specialised physician in another. The materials employed were also different." (BIGGER, CMM7, Attendance)

The term 'systematically' was employed. This is coherent with the idea of adaptive learning and creates the idea of clan supportiveness.

It is important to notice that this description involves a medical procedure. It illustrates that even medical procedures have not been standardised in Brazilian hospitals. Surely, this is reproduced in other hospital areas. The revision of the characteristics started and the predictive model was reviewed in this case. However, lack of planning and control makes a chaotic internal environment, i.e.:

> "I can reduce costs, but in some moments it may even mean the contrary. I am telling you how I worked on these issues here, each place works in a way, some places do not work at all, therefore there are processes that disappear inside the hospital board and nothing happens. At the beginning of 1999 a process of an account of hospital medication disappeared, something about 300 items. Disappeared ... sent to Tom, to Dick, to Harry, no one ever knew where it disappeared, and we were expecting the process and guessing that it was going through the channels inside, suddenly we realised we had to make another hastily, or the hospital would not have the supply at all." (BIGGER, CMM7, Attendance)

This is not an isolated fact and illustrates that there are high difficulties for hierarchical procedures. It seems that, Brazilian managers have to cope with elementary administrative problems, e.g. documents vanishing. This fact is not a surprise considering the different and sometimes conflicting forms of organisation. Surely, this keeps the circumstances favourable to opportunistic behaviour.

British managers did not present affinities with non-cybernetic mechanisms of control. This can be explained, to some extent, by the degree of process standardisation. Among British managers,

there is an identified ability to transform non-cybernetic into a cybernetic procedure and the new managerial technology is communicated. This can be considered effect of the lower ambiguity of objectives. Problems not known are studied and then produce several rules to limit the problems or any other correlated. They 'document' the process, therefore, they emphasise propositional and accessible knowledge. An interviewed manager explained this in phases:

> "The committee noticed a problem ... we had a control panel to study the problem.
>
> Thus, the cause of the problem was found out. ... we put a higher rigour or discipline in the system, ... And they actually had to document this, and then the control that I coordinated would check. And what we did was ... there were some areas where the plan and management did not have the required quality. Then the Control Panel worked with them to improve that...
>
> So, what happened is that we were signalling a problem. We were saying, 'Which is the better way of dealing with this? Do we know enough about this? If we don't, then set a group that will check and solve the problem.' That was what we did and the expenditure was reduced, but we also identified that there will always be a level of expenditure ... due to the usual activities." (MAIOR, AMM7, Human Resources)

It is important to notice that interviewed British managers stated that they frequently use different predictive models, this, to some extent, does not support the figures obtained through the questionnaires. It can be explained if the predictive model is more associated with the planning process as a matter of adjustment rather than with the control process. An interviewed manager asserted that:

> "We have changed. Frequently. I think that most of the models we have used ... If you have a model of a textbook, ... what you have to do is to adjust it to the organization where you are. Then the first step is the adjustment [of the model] ... and then, as you go ahead, you change it, you find things that do not work at all, things that work better...
>
> So as the times goes by you keep on adjusting what you are doing to get the model that probably will produce better results for you." (MAIOR, AMM2, Supplies/consumables)

Considering the similarities presented in Table 8.18, it should be emphasized that managers of both countries considered they are involved with task instrumentality, i.e. beliefs about cause/effect knowledge and input in the same way, i.e. the study of the processes.

Table 8.18 – Process elements or mechanisms and forms of control, summary

Variables/items	Great Britain	Brazil
H7 – revision of the characteristics of the material and process control (more cybernetic)	Yes	Yes
H7a – revision of the characteristics of the material used and control through changing the predictive model (more non-cybernetic)	No	Yes
H8 – characteristics of the professional involved and process control (more cybernetic)	Yes	Yes
H8a – revision of the characteristics of the professional involved and control through changing the predictive model (more non-cybernetic)	No	Yes
H9 – characteristics of the equipment employed and control studying the process (more cybernetic)	Yes	Yes
H9a – characteristics of the equipment employed and control through changing the predictive model (more non-cybernetic)	Yes	Yes
H10 – characteristics of the activity and process control (more cybernetic)	Yes	Yes
H10a – revision of the characteristics of the activity and control through changing the predictive model (more non-cybernetic)	No	Yes

Dissimilarity between managers of both countries was found in the revision of

- characteristics of the material used (input) and control through changing the predictive model (*H7a*);
- characteristics of the professional involved (means) and control through changing the predictive model (*H8a*);
- characteristics of the activity (means) and control through changing the predictive model (*H10a*).

British managers do not support these hypotheses and Brazilian managers do. As said before, given contingent factors, British managers have experienced more integration of the modes of governance and stable policies. Comparatively, Brazilian managers have experienced a different situation.

It is important to note that goal coherence and less changing of the predictive model can be used as a key element to define mechanisms of control in Great Britain. According to the data, British managers apply a more cybernetic model of control, which defines the control by routine or expert (Hofstede, 1981), see Chapter 5.

In turn, Brazilian managers have different goals and use more predictive models, therefore a more complex and less deterministic mechanism of control emerges, which is the non-cybernetic form. Types of control that materialize in this case are the trial-and-error, intuitive, judgemental and political (Hofstede, 1981), discussed in Chapter 5. This means that the activity is non-repetitive, which causes a no learning effect.

7. Cost information usefulness for planning and control and support to decision-making

As seen in the literature (see Chapter 5, section 5.3.3), relevance and reliability are important characteristics of cost information and, consequently they are taken into account for cost information usefulness. These characteristics are directly related to supportiveness of uncertainty reduction and, consequently, adequate decision-making and problem solving. This is supposed to influence positively the managerial activity. This means a better understanding about cause/effect knowledge throughout the process. Thus, some relations of these variables were tested and also the usefulness of the cost information for benchmarking administrative or clinical activity.

Table 8.19 shows that correlations are significant at the 0.01 level for all hypotheses in relation to Brazilian managers. In terms of cost information, it can be said that managers credited its "usefulness for control resources consumption', 'for cost reduction', 'for control supplies/consumables', 'for control equipments', and also 'clinical activities' to its 'ability to facilitate adequate decision'. At the first instance it can sound straightforward, e.g. costs and resource consumption should be reduced. However, it is understood as being much more than an objectively rational answer to a problem and there are two important directions to be followed when using cost information. The cases below explain both:

> "Suddenly, it is not to see the acceptable band as the procedure costs 5 Brazilian Reais, because it is being performed with a completely inappropriate technique, and then you come to me and say that the appropriate technique costs 50 Brazilian Reais to get the appropriate material, it is not to perform obligatorily a study that will prove that I can reduce costs, in some moments it may even mean the contrary." (BIGGER, CMM3, Casualties)

In this case, the difference of costs for equal clinical activities can be used to check these clinical procedures. This is important because in this case, cost information improves knowledge of the transformation process and consequently, decreases the degree of ambiguity in performance measurement. This reduces opportunism and the clan's influence.

Table 8.19 – Correlation between the cost information usefulness and support to decision-making

Hypotheses	GB	Br
H11a: The usefulness of the cost information for control of resource consumption is likely to be positively related to its ability to facilitate an adequate decision. (Q16a and Q15a)	(0.399 **)	(0.421 **)
H11b: The usefulness of the cost information for control of clinical activity is likely to be positively related to its ability to facilitate an adequate decision. (Q16b and Q15a)	(0.369 **)	(0.336 **)
H11c: The usefulness of cost information in planning and control providing cost reduction is likely to be positively related to its ability to facilitate an adequate decision. (Q34e and Q15a)	(0.205) n.s.	(0.295 **)
H11d: The importance of cost information as an element for managerial control of supplies/consumables is likely to be positively related to its ability to facilitate an adequate decision. (Q23a and Q15a)	(0.176) n.s.	(0.432 **)
H11e: The importance of cost information as an element for managerial control of equipment is likely to be positively related to its ability to facilitate an adequate decision. (Q23c and Q15a)	(0.120) n.s.	(0.345 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

However, the objectively rational perspective is also well represented and facilitates decision-making. A Brazilian manager summarized this cost information characteristic as a facilitator to adequate decision-making:

> "Look, actually, it is much more "power of persuasion"... I mean in meetings with other managers, ... How much is it? Is it cheap? Is it cheaper? Then ... change the equipment, dismiss people or put them at disposal, change the medicine or the process. There is no discussion. Some managers become astonished, as it was a sin. No, it is simple. Is it cheaper? So, change it. But the patient cannot undergo any negative effects from that." (BIGGER, CMM14, Wards)

This assertion came from a clan member, this, in terms of Brazil, is a surprise. However, it seems to be an oversimplification.

In Great Britain, cost information usefulness was correlated with 'control resource consumption' and 'control of clinical activity' at the 0.01 level. This was visible during the interviews. British managers know clearly how to use cost information in the way expected by the Government.

> "[Do you think that the use of information in control and planning may promote or help in benchmarking clinical activities?] I think so.
> [Could you tell me how?] Well, this is definitely what they are looking for. They surely look around the region, for instance, the locals where 'hip-replacements' are done, and then they check the locals against each other and of course, checking the contents of the unit of the development of the service. I am frequently checking costs, our activities, as the Health Authorities have the right, I suppose, particularly Birmingham, or the PCG's (Primary Care Groups) now have the right to go and buy this service wherever they wish. Then, if our 'hip-replacement' costs 5 thousand pounds per head and at QE [Queen Elizabeth Hospital] or the Royal Orthopaedic it is 3 thousand pounds per patient, then, of course, they might put more patients at the Royal Orthopaedic than here. Then we are constantly working and checking the aspects, the activities, clinics, you know, using costs as comparative basis. Definitely, yes, we check the costs." (MAIOR, CMM3, Elderly Medicine)

> "[Do you think that the use of cost information interferes with or reduces resource consumption or promotes cost reduction?] Yes, this is certainly what we have been doing. We are reviewing our costs and we know we are supported in doing this by our unit. Then, we must know what we are spending and what we are consuming, what the results are, which volume we are handing, and all this comes with cost information. Therefore, sometimes we may show the result of doing this; we may show the savings that are being done." (MENOR, CMM8, Radiology)

Also there is an agreement in relation to usefulness of cost information for control given its adequacy to support decision-making and problem solving. When considering the line of thought developed in this section and the similarities and dissimilarities between both countries, presented in the Table 8.19, it is possible to confirm that British managers' decision-making process tend to be more related to computation or judgement (see Chapter 5, section 5.2; Thompson and Tuden, 1959) due to the lesser ambiguity in terms of 'means' and 'ends' and uncertainty of objectives/goals. Consequently, accounting systems should work as answer machines and learning machines (see Chapter 5, section 5.2; Burchell et al., 1980). This is coherent to the fact that the hierarchy, as a mode of governance, incorporates clan members and emerges from the decrease of both goal incongruence and ambiguity in performance measurement.

Applying the same mechanisms it is possible to confirm that Brazilian managers' decision-making process tends to be related to inspiration and compromise (see Chapter 5, section 5.2; Thompson and Tuden, 1959). This confirms that the clan is stronger than the hierarchy in Brazilian hospitals. It must be said that this is supported by the theory, i.e. the compromise exerted within the clan is much more observed than hierarchical mechanisms (see Chapter 4, section 4.2; Osborne, 1997) or inspiration. Strengthened by the political forms of control described above, these show that Brazilian middle managers are managing in an extremely complex and uncertain environment. As posed before, there is a high degree of goal

incongruence and, concomitantly, a high degree of ambiguity in performance measurement. This conducts to a more ritual/symbolic form of control (Bourn and Ezzamel, 1986). Accounting systems, and consequently cost information, in such an environment tend to be used as ammunition or as a rationalisation machine (discussed in Chapter 5, section 5.2; Burchell et al., 1980). There is an emergence of individual decision units, underpinned by opportunistic and charismatic leaders.

It should be said that, the knowledge, which is a strong factor to determine whether the manager is part of the clan or hierarchy, is important to determine the use of cost information within hospital. As shown below, managers with an administrative background, can find some difficulties in determining how to apply cost information to develop clinical treatments:

> "[What about clinical treatments?] I don't know – this is a difficult question. Coming from an administrative background my first reaction would be 'no, I don't see how this might have improved.'" (MENOR, AMM10, Estates)

This is not a surprise, because it is a common characteristic to hospitals, one that is caused by the knowledge issue. This evidence of the importance of the hierarchy composed by clan members.

8. Cost information usefulness and benchmarking of administrative and clinical activities

The correlation between the 'usefulness of cost information for control of clinical activity' and 'benchmarking of clinical activities' was tested. Similarly, the correlation between the 'usefulness of cost information for control of administrative activity' and 'benchmarking administrative activities' was tested. The results are presented in Table 8.20.

The usefulness of cost information aiming administrative improvement is strong in both countries, i.e. 0.540 in Great Britain and 0.516 in Brazil significant at 0.01 level, see *H11f*, Table 8.20. Reasons can be that administrators are more prepared and administrative procedures are more accessible to changes in both countries.

Table 8.20 - Correlation between the usefulness and benchmarking of activities

Hypotheses	GB	Br
H11f: The usefulness of cost information for control of clinical activity is likely to be positively related to benchmarking of clinical activities. (Q16b and 34a)	(0.345 **)	(0.151) n.s.
H11g: The usefulness of the cost information for control of administrative activity is likely to be positively related to its usefulness for benchmarking administrative activity. (Q16c and Q17c)	(0.540 **)	(0.516 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

The usefulness of cost information for clinical improvement presented a correlation of 0.345 significant at the 0.01 level for Great Britain. It is important to highlight the coherence of these findings with what has been discussed so far. British managers use cost information for control and benchmark both clinical and administrative activities. This can be explained by the fact that the knowledge is permeated in the hierarchical form of organisation. This is possible, to some extent, because of the integration of the modes of governance. The long process of training and 're-education' through which British managers have passed through can be used to explain this fact as well.

Brazil did not present a significant correlation for control and benchmarking clinical activities, see Table 8.20. This is consistent with what has been discussed for Brazilian managers. There is not an integration of modes of governance or managerial training. Therefore, they do not share any form of knowledge. However, as a Brazilian manager explained, they are now starting this process:

> "Look, until very recently, when there was too much inflation, we didn't have any idea or notions about the cost of hospital treatments. Now we start to try some estimates and there is much to be improved, but we have already seen the potential of cost information. You see, we have started to estimate the cost of procedures and identified some for study. We took the cost of a given procedure among several floors of this hospital. The costs of the same treatment used to vary so much from floor to floor in the hospital that we had to perform a detailed study of the reasons for that. We were amazed with the absolute lack of standardization of the same procedure inside the same hospital. Then, you see, there is a lack of standardisation of procedures and this is basic, elementary. You see, we still have elementary problems to solve. But the cost information helped to set standards to this one, and now, other hospital procedures as well. Thus, no doubts, cost information now helps to set standards and, consequently, to develop in the future, by internal comparisons with other departments inside this hospital, or external, with other hospitals." (BIGGER, CMM7, Attendance)

This is important because it means internal benchmarking. However, this does not mean that there is a general policy and that a second step would be external benchmarking. This is just an isolated fact and as the manager said, this is a basic, an elementary process.

9. Cost information usefulness for cost reduction and its effective use as an element of managerial control

The first and most common application for cost information in planning and control, mainly in terms of Brazil, is 'cost reduction'. It can be considered an objectively rational use of cost information. As shown previously (see Chapter 3), Brazil does not have any clear local or national policy emphasizing the use of cost information as an indicator of efficiency or performance measurement. It has been quite different in Great Britain. The use of cost information in a way other than elementary 'cost reduction' or 'reduce resource consumption' in Brazil can be considered as isolated actions.

The correlation of 'usefulness of cost information for cost reduction' and the three processes of interest, i.e. supplies/consumables, human resources and equipment was tested. Table 8.21 presents the results.

As expected, Table 8.21 shows positive and significant correlations at the 0.01 level for 'the use of cost information for cost reduction', and its use 'for managerial control of supplies/consumables', 'human resources' and 'equipment' in Brazil. British managers did not present any significant correlation. Interviewed Brazilian managers illustrated this:

> "We used to use soap, then we started to use soap wall dispensers that were expensive to us, of course if you say this in England they will laugh at you, in the first month in spite of the high cost of the equipment we saved 30%." (SMALLER, CMM12, Clinical - Orthopaedics)

> "When we started the discussion of first proposal of services, the first step was what we are going to have or have not at the hospital, what we are producing in the social field, ... in all the stages one of the issues was the cost, ... The planning of the work we did was concerning the pharmacy, as a priority for the hospital, as what happens is that the pharmacist keeps the function as dispensing chemist and the nurses and the aid nurses do the job of manipulation, to prepare the ampoules. Just because the pharmacy and SNF consume 80% of our cost we want to invest to reduce the cost, because if you have a professional who doesn't practice what he has learned, you are wasting money. We are going to have a much lower cost if the pharmacist [and nurses] does his own work. " (SMALLER, CMM10, Casualties)

> "All the programmed activities take into account cost and efficiency, we had a meeting today where we were dealing with deep veins' procedures, and we reached the conclusion that if we buy more expensive catheters we may not even have a low financial cost at short term, but we will avoid problems, of transference due to complications, it is better to use materials ten times more expensive than to be exposed to risks, first, of getting a worse service quality, and second to unfold to other costs, but at medium or short term it will be a cost." (SMALLER, CMM12, Clinical - Orthopaedics)

It is important to observe that the use of different equipment, more expensive, is reasonable because any problem can cause transference due to complications and, consequently, more costs. Surely, the cost information helps Brazilian managers to reduce risks for patients.

Table 8.21 – Correlation between the usefulness of cost information for cost reduction and its effective use as an element of managerial control

Hypotheses	GB	Br
H12a: The usefulness of cost information in planning and control for cost reduction is likely to be positively related to its use as an element for managerial control of supplies/consumables. (Q34e and Q23a)	(0.030) n.s.	(0.442 **)
H12b: The usefulness of cost information in planning and control for cost reduction is likely to be positively related to its use as an element for managerial control of human resources. (Q34e and Q23b)	(0.087) n.s.	(0.329 **)
H12c: The usefulness of cost information in planning and control for cost reduction is likely to be positively related to its use as an element for managerial control of equipment. (Q34e and Q23c)	(-0.066) n.s.	(0.424 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

As also expected, Great Britain does not present any significant correlation of these variables. British managers gave certain reasons as to the non-use of cost information in all daily activities:

> "Cost information is ... very important for planning. It is essential, paramount ... but not the way it is presented normally, you know, accountants are, it seems to me, highly specialized ... sometimes you want something more adjusted to you, to your day-to-day needs and not that report, you know, with so much unnecessary information. This hospital is ruled by budgets. Everything goes round budgets and these budgets are much more accounting procedures than managerial ... It seems that anyone is able to understand a budget, is able to manage, and this is not true. You have to go beyond the budget to manage people, things, targets." (MAIOR, CMM3, Elderly Medicine)

They are part of elementary administrative knowledge. This does not mean that cost information is not used for it. However, it is still important to the managerial control of, for example, consumed resources:

> "[Do you think that cost information is useful for the control of resources consuming?] Certainly, from my point of view, it is actually very easy, for instance, knowing the cost, to know how much money will be consumed by a group of one hundred medical registers, then, if the committee is planning to open a clinic and you have a hundred patients a week, then the information about cost is very important as I can assemble the pieces and check what has been foreseen against what has been consumed, even in mind and, of course, numerically." (MAIOR, AMM2, Supplies/consumables)

10. The rational use of cost information and environmental uncertainty and prediction

According to the literature (discussed in Chapter 5, sections 5.2 and 5.3.2), cost information is related to major explanatory contingent factors such as uncertainty reduction and prediction supportiveness. Therefore, these properties were tested considering the elementary and objectively rational use of cost information, i.e. 'reduction of resource consumption' and 'cost reduction'.

In terms of British managers, Table 8.22 confirms the expectation, i.e. they presented a positive correlation of 'use of cost information for reduction of resource consumption' and 'uncertainty reduction', i.e. 0.366 significant at the 0.01 level. Similarly, British managers supported a positive correlation of 'use of cost information for cost reduction' and 'uncertainty reduction', i.e. 0.422 significant at 0.01 level. Brazilian managers do not support these hypotheses.

Table 8.22 – Correlation between the rational use of cost information and uncertainty reduction and prediction

Hypotheses	GB	Br
13a: The reduction of resource consumption, when using cost information in planning and control, is likely to be positively related to uncertainty reduction provided by the cost information. (Q15e and Q34d)	(0.366 **)	(0.128) n.s.
13b: Cost reduction, when using cost information in planning and control, is likely to be positively related to the uncertainty reduction provided by the cost information. (Q15e and Q34e)	(0.422 **)	(0.162) n.s.
13c: The usefulness of cost information for prediction is likely to be positively related to its use for managerial control of administrative activity. (Q16c and Q14b)	(-0.116) n.s.	(0.403 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

The explanation of this phenomenon in terms of Great Britain is related to the manager's ability in producing a more sophisticated analysis of project development and the fact that the knowledge permeates the hierarchy. Predictive models of the planning process are associated with uncertainty reduction present in budgets. In managerial terms, within British hospitals, budgets are considered a reflex of the planning process and not the opposite. This can be considered circumstantial or contingent adaptability. Interviewed managers illustrated this:

> "Thus, what they do within the Business Plan is that they take Finances, Services, Human Resources and Personnel and put all together when they are working out the Business Plan. Then this is straight from the start. And then what happens, maybe I should finish the cycle, when the Business Plans are what we say 'signed up', then, each Directorate gets a budget and this is the budget for the year, and they have to administer within that budget and, obviously, you know, if they spend too much with drugs, for instance, they need ... to re-align the moves, I don't know, maybe the personal staff budget line or, you know, the equipments line, or whatever it may be." (MAIOR, AMM7, Human Resources)

> "[Do you think that the use of cost information for control and planning may help, for instance, decision-making and problem solving?] Oh, yes .... I think that it is very important to set the aims very early and to develop a lot of work in the first stages. A lot of accurate work in the first stages eventually eliminates a lot of problems in the project. Then it is important to have the procedures in the first stages so that the project goes as smoothly as possible. This is provided through the plan procedures, when you ... realize what they expect and are trying to reach [use of predictive models]. You go through the planned stages. Periodically you check how the costs are going, what the implications of the decisions are ... if the work was not correct at the beginning [control], then you end an artificial schedule of low budgets, you will be always struggling and you will always have problems. You tend to waste resources because, what do you do? You go up and down in the project. You realize and cannot afford it and then you go back 4 or 5 stages and have to re-draw it. I mean, the cost information will allow you to have everything right within a planning and control process [uncertainty reduction], going through it without retrogression." (MENOR, CMM4, Trauma and Orthopaedics)

In terms of Brazilian managers, Table 8.22 shows that they do not support correlation of 'use of cost information for reduction of resource consumption' and 'uncertainty reduction'. Similarly, Brazilian managers do not support any correlation of 'use of cost information for cost reduction' and 'uncertainty reduction'. However, they positively correlated the 'usefulness of cost information for prediction' and the 'managerial control of administrative activity', 0.403 significant at 0.01 level. British managers did not. Reasons for this lack of rational use of cost information in Brazil can be explained, to some extent, using the fact that planning and budgeting are not integrated or, sometimes, even existent:

> "About planning ... Practically there is no planning, no, everything is done hastily as it is not worth to plan, there is no compliance, under the State there is no compliance with anything, no, the budget never meets the planned schedules therefore you need to divide, sub-divide, and borrow from someone when the budget comes, this year the budget was 85% less but there was already the store department people you have already taken that material then there is no other way, you start owing 15% to others and that is it, when September, October arrives the budget has already been consumed, and then everything is, oh, actually a mess at all." (SMALLER, AMM11, Costing)

> "[You talked about budget; do you plan using the budget?] We cannot plan about what we have already used, the people from the material or purchase department, I don't know, are the ones who should plan in advance." (SMALLER, AMM11, Costing)

This sceptical situation about managerial mechanism that drives accountancy and emphasises control is common between Brazilian managers. These circumstances also reinforce points

discussed before, i.e. opportunism thrives in Brazilian hospitals and clinical freedom is guaranteed. The clan and the hierarchy are distinct and, sometimes, conflicting modes of governance. The clan has privileges and controls the situation. There are no common and overall objectives, therefore there is a lack of managerial commitment to the feasible region of intersecting, acceptable sets of actions. It is important to say that the control and planning processes within public hospitals in Brazil is a response to major explanatory contingent factors such as (lack of) governmental policies and uncertainty.

11. The planning and control responsibility and the use of different predictive models when planning and the adoption of mechanisms of control

Administrators are expected to have stronger interests in using different predictive models when planning within hospitals. They were trained this way. In turn the use of different predictive models when planning should impact the mechanism of control. There is an apparent relationship between the use of different predictive models when planning and the mechanism adopted as form of control. Therefore the following hypotheses *H14a*, *H14b*, and *H14c* were tested.

Table 8.23 shows that British managers presented significant association between 'planning is an administrators' task' and 'use of different predictive models', i.e. 0.273 significant at the 0.01 level. They also supported the correlation of 'control is an administrators' task' and the control of material by cause', i.e. 0.268 significant at the 0.05 level. Finally, British managers also sustained the association of control as an administrators' task' and the 'control of material by process, i.e. 0.362 significant at the 0.01 level. Brazilian managers do not support any of these hypotheses.

Table 8.23 - Correlation between the use of different predictive models when planning and mechanisms of control

Hypotheses	GB	Br
H14a: The more planning is an administrators' task in the hospital, the more the use of different predictive models when planning. (Q28 e Q32b)	(0.273 **)	(0.146) n.s.
H14b: The more control is an administrators' task in the hospital, the more the managerial control of (consumed) material by cause. (Q25a e Q32d)	(0.268 *)	(0.091) n.s.
H14c: The more control is an administrators' task in the hospital, the more the managerial control of (consumed) material by process. (Q25c e Q32d)	(0.362 **)	(0.096) n.s.

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

These results are not a surprise, mainly in terms of Brazil. Brazilian managers, as members of the hierarchy or administrators are unable to interfere with the processes. They lack the necessary

knowledge and, furthermore, there is not any form of process standardisation. Comparatively, British managers can interfere widely, i.e. in the causes, and locally, i.e. in the processes.

Again, it can be said that, in Great Britain, the elements involved in planning and control are clearer and better defined than in Brazil. Managers are supposed to check procedures and policies as agents of 'the causes' and 'the process' together with preceding experiences to help planning. An interview with a manager in Great Britain gives support to this assertion:

> "We ... surely when we are planning something about patients ... we look at the last year's activities, predicted changes in policy and procedure, external influences, internal influences and then, obviously, our 'service development unit' help us to predict next year's activities." (MENOR, CMM8, Radiology)

Given contingent aspects, Brazilian hospitals are still demanding less control and more surveillance as detected during the interviews. They would rather have a different form of control, as posed by this manager:

> "The Department deals with very expensive material and one of the problems we face is that the policing against robbery, "fine stuff", not to mention the equipments that are also very expensive, what we have done is always to lock the door, if we notice that there is a kind of 'disappearance of material', we reinforce [control]. Here the store department staff controls the material consumption monthly, when it exceeds a little they give warnings. When there wasn't the store department control there wasn't such a good control, now we keep our own control, and the central stocks department control. ... They know how much is needed to supply the stocks they make forecast for the annual seasons (Summer, Winter), football matches, Carnival, you know, the control has been well done downstairs by the store department chief and she holds it tight very well. If you loose it, ... it collapses." (BIGGER, CMM9, X Ray)

This situation is comprehensive because of the lack of standardisation, knowledge, training and other circumstances. As it can be noticed and was mentioned before, planning considers events such as carnival and football games as variables of predictive models.

12. The use of different predictive models when planning and controlling

It was suggested that Brazilian managers alternatively use different variables and predictive models or even complete improvisation or accidental clues when planning due to contingent factors such as environmental uncertainty, different modes of governance and lack of general standardisation for hospitals internal planning an control. Following this, it is expected that the more use of different predictive models when planning should be reflected in the managerial control in Brazil. In Great Britain, given contingent factors, it is not expected.

Table 8.24 shows that, Brazilian managers associated positively the 'use of different predictive models when planning' with 'managerial control of material by cause', i.e. 0.353 significant at 0.01 level. They also supported the correlation between the 'use of different predictive models when planning ' with 'managerial control of material by process', i.e. 0.475 significant at 0.01

level. British managers, as expected, did not present such a correlation. As discussed before, this reinforces the integration of modes of governance and knowledge. Defined overall objectives and standardisation also contribute to contingent adaptability. This restrains opportunism and encourages behaviour congruence.

Table 8.24 – Use of different predictive models and control

Hypotheses	GB	Br
H15a: The more the use of different predictive models when planning, the more the managerial control of (consumed) material by cause. (Q25a and Q28)	(-0.021) n.s.	(0.353 **)
H15b: The more the use of different predictive models when planning, the more the managerial control of (consumed) material by process. (Q25c and Q28)	(0.148) n.s.	(0.475 **)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

Brazilian managers have proved that they use what they have available to hand, and managers are not being prepared to assume managerial posts. The hierarchical or bureaucratic processes are also responsible for improvisations seeking to overcome difficulties, as this manager declared:

> "In terms of planning ... here in the hospital it is a bit different as things must be done quite quickly ... the managerial attitudes must be immediate, and even in spite of the difficulties of the public service, many times we have to speed up the process, and follow up with patience, waiting for the legal process. ... we are always expecting and trying to go ahead and gain time in relation to the state bureaucracy, we have always worked to follow up the documents not to let the things go according to the usual public service slow way, planning is much ahead of anything that the hospital is able to offer, in material terms and human resources, but always trying to overcome bureaucracy's long time consuming." (BIGGER, CMM3, Casualties)

> "I have been in this sector for eight years, during six years I was always 'fire fighting', in the last two years we have been trying to do some planning, and I am not a trained administrator. I became a coordinator by chance here in the Hospital, as the coordinator had left, moved to other Unit and the other coordinator retired and by chance I took the two posts, with no experience or initiative at all, but I learned little by little, in the two places in this hospital. I was fire fighting. In the other hospital, I've been through 3.5 years trying to correct things, this gives you a vision of the Brazilian public service, now I have started to think about some planning, but in a very limited way, even shy, as you might plan, but you do not manage to make things go ahead." (BIGGER, CMM9, X Ray)

Circumstantially, as shown above, managers stay many years in the department just doing what is absolutely necessary, without a coherent form of planning. Therefore, it is not surprisingly that the more use of different predictive models does not provide any form of coherent control or learning. Additionally, the absence of general objectives in a situation where managers are not trained certainly increases opportunism and strengthens informal relationship. Giving contingent aspects it is rather difficult to discuss about a feasible region of intersecting, acceptable sets of actions, which should encourage behaviour congruence.

13. Centralisation and use of cost information for control of administrative activity

Finally, the usefulness of cost information for controlling administrative activity gives indication of a more centralised organisation. It would be considered a more objectively rational and hierarchical use of cost information. Table 8.25 below shows that this assertion is valid, as expected, only for Brazilian managers, i.e. 0.217 significant at 0.05 level.

Table 8.25 – Centralisation and use of cost information for control administrative activity

Hypothesis	GB	Br
H16: The usefulness of cost information for control of administrative activity is likely to be positively related to centralisation. (Q16c e Q21b)	(-0.103) n.s.	(0.217 *)

** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level; n.s. Non-significant

In Brazil the planning process, as said before, if existent, occurs in a top down way, highlighting the centralisation, which could cause similar strategy of control. As discussed before the cost information system is still in its infancy. There are problems other than technical ones for its development. Interviewed managers illustrated these points:

> "Our planning ... happens normally in a top down way, even currently the hospital is working in a process of managerial decentralization and it is not unintentional. The board plans and then, during the execution, we have difficulty to make things work, as there has not been participation of several areas." (SMALLER, AMM8, Human Resources)

> "Our cost system started in 98, this is a public hospital ... From then on people have been trying to improve, but we come against the information issue. Currently we have costs with a patient in a ward, that is, costs per physical area and not per patient, or activity, the information data will make possible the use of this information for decision-making in other areas. I know we have cost information for treatments but I do not have any time available to look at it. The issues here are also very political ones." (SMALLER, AMM17, Supplies/consumables)

Brazilian managers support the view that centralisation is, to some extent, responsible for the usefulness of cost information for control of administrative activity, which is not supported in Great Britain. This is reasonable, because, as defended by the theory, cost information provides an indicator of performance and also provides a 'distance reduction' in hierarchical terms within the organization. Centralisation demands mechanisms of control to preserve power and influence. This was confirmed in Brazilian hospitals. Furthermore, given the higher uncertainty and ambiguity in performance measurement and the high degree of goal incongruence, the clan tries to preserve the ritual/symbolic form of control.

8.2.5 Similarities and dissimilarities

This part summarises the hypotheses tests based on quantitative data. Table 8.26 below groups all similarities found in the level of planning and control explored in this section. Managers of

both countries agreed that the time they have spent in planning is adequate (*H4*), i.e. the more the time spent with managerial planning, the more the judgement of this time as being adequate. They also rejected similar assertion for control (*H5*).

Phase theorem means knowledge and domain of the decision-making process. Managers of both countries have the same opinion in terms of the application of phase theorem, i.e. the use of phase theorem in planning reflects its application for control (*H6a* and *H6b*). This repeats for supplies/consumables.

Table 8.26 – Similarities

Hypotheses	Variables/items
H4	Planning in relation to the time spent and adequacy of the time spent
H5	Control in relation to the time spent and adequacy of the time spent
H6a	Application of phase theorem for planning and control
H6b	Application of the phase theorem in decision-making/problem solving for managerial planning of supplies/consumables and managerial control supplies/consumables
H7	Revision of the characteristics of the material and process control
H8	Characteristics of the professional involved and process control
H9	Characteristics of the equipment employed and control studying the process
H9a	Characteristics of the equipment employed and control through changing the predictive model
H10	Characteristics of the activity and process control
H11a	Usefulness of cost information for control of resource consumption because it facilitates decision-making
H11b	Usefulness of cost information for control of clinical activity because it facilitates decision-making
H11g	Usefulness of cost information for control of administrative activity for benchmarking administrative activities

Process elements and forms of control were tested in pairs (*H7* and *H7a*, *H8* e *H8a*, *H9* and *H9a*, *H10* and *H10a*). Mechanisms of control (more cybernetic and more non-cybernetic) were correlated with supplies, human resources, activities and equipment. Brazilian managers and British managers agreed with the use of a more cybernetic form of control with these elements. However, as expected, British managers rejected the use of a more non-cybernetic mechanism of control with the majority of elements.

Finally, according to managers of both countries the usefulness of cost information for control resource consumption (*H11a*), control clinical activity (*H11b*) and benchmarking of clinical activities (*H11g*) is related with its ability to facilitate decision-making.

The dissimilarities involving planning and control processes in relation to the hypotheses tested in both countries are presented in Table 8.27. This fact is assigned 'yes'; in accordance to the significance at 1% or 5% obtained through the Pearson's coefficient of correlation; or 'no', i.e.

respectively middle managers support or do not support the correlation. It is not surprisingly that more dissimilarities than similarities are presented.

Table 8.27 – Dissimilarities

Hypotheses	Variables/items	Great Britain	Brazil
H7a	Revision of the characteristics of the material used and control through changing the predictive model	No	Yes
H8a	Revision of the characteristics of the professional involved and control through changing the predictive model	No	Yes
10a	Revision of the characteristics of the activity and control through changing the predictive model	No	Yes
H11c	Usefulness of cost information in control and planning providing cost reduction because it facilitates decision-making	No	Yes
H11d	Importance of cost information as an element for managerial control of supplies/consumables because it facilitates decision-making	No	Yes
H11e	Importance of cost information as an element for managerial control of equipments because it facilitates decision-making	No	Yes
H11f	Usefulness of cost information for control of clinical activity for benchmarking clinical activity	Yes	No
H12a	Usefulness of cost information in planning and control for cost reduction as an element for managerial control of supplies/consumables	No	Yes
H12b	Usefulness of cost information in planning and control for cost reduction as an element for managerial control of human resources	No	Yes
H12c	Usefulness of cost information in planning and control for cost reduction as an element for managerial control of equipment	No	Yes
H13a	Reduction of resource consumption, when planning and controlling, due to the uncertainty reduction provided by the cost information	Yes	No
H13b	Cost reduction, when planning and controlling, due to the uncertainty reduction provided by the cost information	Yes	No
H13c	Usefulness of cost information for prediction as an element for managerial control of administrative activity	No	Yes
H14a	When planning is an administrators' task there is an increase in the use of different predictive models	Yes	No
H14b	When the control is an administrators' task there is an increase in the control of material studying causes	Yes	No
H14c	When the control is an administrators' task there is an increase in the control of material studying processes	Yes	No
H15a	The use of different predictive models when planning increases the control of material studying the causes	No	Yes
H15b	The use of different predictive models when planning increases the control of material studying processes	No	Yes
H16	Usefulness of cost information for control administrative activity due to centralisation.	No	Yes

Obs.: shaded areas are used just to distinguish groups of hypotheses.

Hypotheses *H7a*, *H8a* and *H10a* indicate that British managers use to change less the predictive model when controlling. Brazilian managers do it more frequently.

The hypotheses represented by the group *H11c*, *H11d*, *H11e* shows that Brazilian managers supports the usefulness of cost information for a more trivial form of control, e.g. cost reduction and control of supplies and equipments because its facilitates decision-making. In terms of a more advanced use of cost information, such as for benchmarking clinical activities (H11f) the

situation is inverted, i.e. British managers support and Brazilian managers do not. It is not surprisingly because the British government has insisted in this technology.

Coherently with the preceding findings, Brazilian managers support the usefulness of cost information as an element for control supplies/consumables (*H12a*), human resources (*H12b*) and equipment (*H12c*). British managers do not support such usefulness of cost information.

The group of hypotheses represented by *H13a*, *H13b* and *H13c* show that British managers support that the uncertainty reduction provided by the cost information helps resource and cost reduction. British managers do not support the same situation for control administrative activity. Brazilian managers support that the uncertainty reduction or prediction provided by the cost information helps to control administrative activity. This seems logical because Brazilian managers are more interested in restraining opportunism via accounting systems, therefore, cost information is used as a mechanism to control members of the hierarchy.
Hypotheses *H14a*, *H14b* and *H14c* show that British managers support that administrators are prepared to execute planning using different predictive models and, to some extent, exercise control in a more managerialist and scientific rational form. Brazilian managers do not support any hypothesis of this group.

There is a disagreement between Brazilian and British managers in terms of the use of different predictive models and control of material by process (*H15a*) and by causes (*H15b*). Brazilian managers support and British managers do not. An explanation could be the higher use of different predictive models by Brazilian managers.

Finally, Brazilian managers reinforce the use of cost information for controlling administrative activity, in this case, because of centralisation (*H16*). Not surprisingly, British managers do not support it.

Chapter Summary

This chapter firstly presented other results of descriptive nature before evaluating the hypotheses. It was initially divided into two parts. The case study settings were compared in both countries. The presence of a structured and known hospital planning process in Great Britain contrasts with the lack of it in Brazilian hospitals. This situation in both countries reflects the control processes.

In Brazil the non-existence of planning and control processes considering the hospital level caused a shift of the responsibility to the areas/sectors influencing the middle management mediation role. This caused, among others, the emergence of diversified and independent planning and control processes, the proliferation of different goals and predictive models, and ad hoc decision-making. Certain effects, such as opportunism, increased.

The second part examined the evidence for the hypotheses. This part was further divided into three sections. Firstly, it was found that British clinicians are involved in planning and control processes and using cost information for the provision of clinical development. This is considered a response or contingent adaptability to explanatory factors such as Governmental policies and the integration of modes of governance. This integration mitigated differences caused by the knowledge, which is concentrated within the clan. This fact reduced the incompleteness in terms of beliefs about cause/effect knowledge, which contributes to decrease the degree of ambiguity in performance measurement. At the same time, a lower degree of goal incongruence occurred. Comparatively, these facts propitiated, coherently, a middle management mediation role committed to the feasible regions of activity in terms of the use of cost information in control and planning processes, which has encouraged behaviour congruence.

British hospital's evolution is based, to some extent, on clinical domain and general objectives. Another point to be highlighted is that the usefulness of cost information is influenced by background, organizational, public and area/sector objectives.

Secondly, control mechanisms were discussed. As expected, Brazilian managers use more different predictive models and tend to the adoption of no-cybernetic mechanisms of control. They use types of control such as trial-and-error, intuitive, judgmental or political. This is a reflex or contingent adaptability to explanatory factors such as (lack of) Governmental policies, lack of hospitals' overall planning and control and non-integrated modes of governance. It is important to put the presence of different objectives and higher goal incongruence. Clan members do not share the knowledge, narrative and prepositional, and, purposively, difficult the access to it. These keep clinical freedom untouchable and increase the degree of ambiguity in performance measurement and discourage progress in this matter, for example, making difficult standardisation. The result is a more ritual/symbolic form of control and planning. It is almost impossible to identify strands of behaviour congruence or common feasible regions of activity. Opportunistic behaviour thrives in Brazilian hospitals.

Given contingent factors, British managers use more cybernetic mechanisms and types of control such as routine or expert. Surely, adaptive and generative learning are present in NHS Trusts.

Thirdly, the usefulness of cost information in relation to the decision-making process was examined. British managers were related more to the computation or judgement decision-making strategy, which causes the use of accounting systems as answer or learning machines. In turn, Brazilian managers are associated with compromise and inspiration decision-making, which influences the use of accounting systems as ammunition or rationalisation machines. The next chapter concludes this thesis.

Chapter 9 - Conclusions

This thesis investigated planning and control processes within British and Brazilian hospitals. This study established a comparison of the middle management mediation role in Great Britain and Brazil involving the use of cost information. The scenario entailed contingent factors, such as governmental policies and uncertainty, being reflected in planning and control processes within public hospitals.

The pillar of each healthcare system is the Government funding and the main objective is free healthcare at the point of delivery based on citizenship. Both countries have parallel private healthcare sectors and private insured people but in Great Britain this is relatively small.

The British government has practised national policies and central regulation and, further, exercised internal control and determination within hospitals. British public hospitals have an invigilated independence. The Brazilian government has defined general policies as well, however, hospitals managers are relatively free to decide about internal issues. Brazilian public hospitals can be said to be independent, however, there are several constraints about certain internal matters, e.g. decisions cannot involve issues of human resource management in terms of moving, contracting or firing people[1]. In terms of supplies/consumables, the purchasing is a matter of federal legislation (Law 8.666) and also equipment purchasing or technology change. It must be said that, as seen during interviews, the legislation - when applied within hospitals - can be "adapted" in its practical nature. An example is the informal system of "borrowing medicines and equipment" between hospitals.

Hospitals in Great Britain have been permeated by technical rational policies, which originated in the external environment and, to some extent, this has influenced middle managers actions. The length of this influence and circumstances has been discussed in this thesis. This objectively rational influence put pressure on middle managers of each country, as an individual, as part of modes of governance, clan or hierarchy, and as part of the hospital's structure. In another way, the complex rationality, characteristic of the hospital service, has contributed to put pressure on middle managers as well.

The proposed comparison of this study was reduced to planning and control managerial functions. These functions are normally wide, however they had to be narrowed to make this study possible and intelligible. They were focused on planning and control, sometimes, related to human resources, supplies/consumables and equipment. Having the cost information as a central point in both healthcare systems, it was sought to study and understand planning and control involving both rationalism and practice.

Theoretical contribution: discussion

This research explored the existence of a contingent circumstantial adaptability involving cost information use model for public hospitals mediated by the integration of two internal modes of governance representing the clan and the hierarchy. The general view of the model with the theory underlying this exploratory/descriptive study is illustrated in the Figure 9.1.

Research instrument and scale were developed and tested to sustain the first phase of the research and the investigation of the model for public hospital. The research study encompassed a questionnaire to 150 middle managers, clinicians and administrators, in a survey involving 26 NHS Trusts in Great Britain and 22 public hospitals in Brazil. The questionnaire data was supplemented by interviews with managers, i.e. 10 were carried out in Great Britain and 22 in Brazil, in four selected case study settings.

The results presented and analysed in chapters 7 and 8 support the model for public hospitals. They provide conclusive evidence for the existence of an international dimension to contingency theory, which is supported by the cross-national approach, influenced by internal modes of governance, i.e. environmental and contingent factors permeated by forces that emerge from transactions, e.g. opportunism and bounded rationality are reflected by planning and control processes. There are similarities in hospitals response to the environment in the two countries; however, there are dissimilarities in internal organisational structures of governance. This also causes differences in the use of cost information for planning and control.

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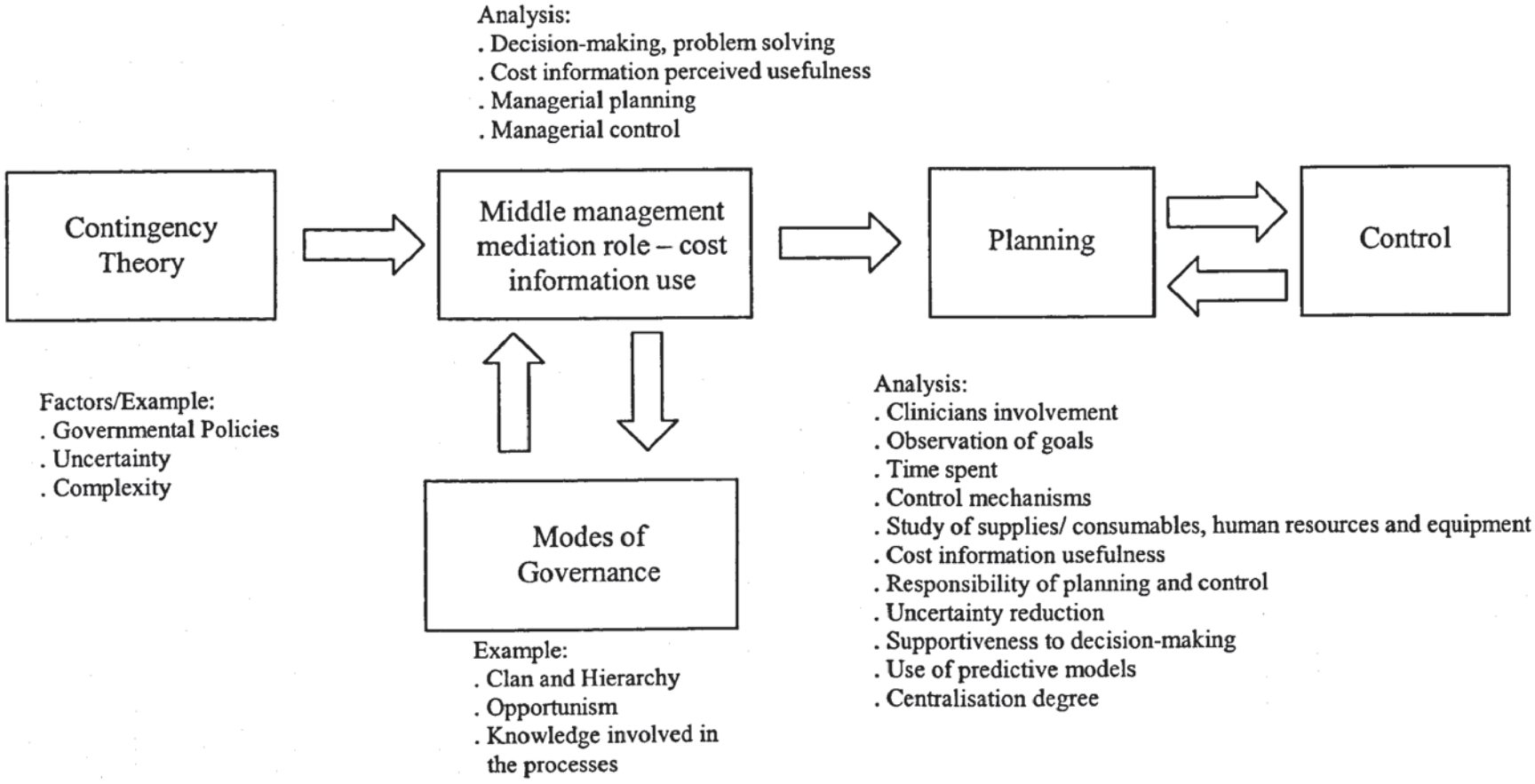
[1] The vast majority of public hospitals employees are civil servants. They are said 'stable', which means that they cannot be fired or removed except in rare situations.

Figure 9.1 – Cross national cost information use model for public hospitals' middle managers



The model proved to be valid in providing a detailed two-country comparison on the use of cost information for planning and control within public hospitals, in which contingent circumstances are diverse, but with coherence in the organizational response. More studies in the future will refine the characteristics of planning, control and cost information usefulness as well as their integrative features. This is necessary to maximise the benefits of cost information technologies providing support to the valuable welfare state, i.e. free healthcare at the point of delivery for everybody.

Despite differences in contingent or major explanatory factors such as governmental policies, environmental uncertainty and technologies, it is important to say that the general profile of the public hospital managers presented strong similarities in both countries. The cost information available for British managers is more extensive and easier to access as discussed in sections 7.2.1 and 7.2.2.

According to the research findings, British hospitals present a comparatively major integration of clan members in the hierarchical organisation. This situation, as discussed before brings the knowledge of the 'transformation' process, mainly the narrative, pragmatic and descriptive (Ouchi, 1979; Tsoukas, 1995), to the hierarchy. This enables the hierarchy to get a better understanding of processes and task instrumentality and, consequently, to develop and apply managerial technology (for example, elaborated forms of control) seeking to decrease the degree of ambiguity in performance measurement. This facilitates external control and also encourages planning (Covaleski et al., 1993).

British managers showed, comparatively, a higher degree of goal congruence, when using cost information for planning and control. This contributes to decrease the degree of goal uncertainty. These aspects reinforce the hierarchy as the mode of governance as defended by Ouchi (1979), Bourn and Ezzamel (1986) and Lapsley (1993). Given contingent aspects such as governmental policies and environmental uncertainty as major explanatory factors, British hospitals present comparatively more structured planning and control processes. The occurrence of non-programmed decision-making or non-structured problem triggers, within the hierarchy, a process to solve the problem and map it making it structured and documented. This incorporates both generative and adaptive learning. In such circumstances, the use of cost information contributes to the existence of a middle management's mediation role committed to the feasible regions of activity, which encourage behaviour congruence.

Therefore, the hierarchical organisation is able to support benchmarking of clinical and administrative activity.

In turn, according to findings, Brazilian public hospitals present a rather different internal environment, which is also a result of contingent factors such as (lack of) governmental policies and environmental uncertainty. These and the healthcare system historical evolution facilitated the emergence of public hospitals where can be identified, at least, the clan, the hierarchy and the market form of organisation. Brazilian managers present a high degree of goal or objectives ambiguity and uncertainty in terms of decision-making. They also present a high degree of uncertainty of cause/effect relationship. Surely, the presence of different forms of organisation is responsible for this situation. This situation conducts to a situation where control is more ritual/symbolic as defended by Bourn and Ezzamel (1986).

The knowledge of the 'transformation' process is restricted to clan members, who demonstrated to be disinterested in sharing it. The general idea is to keep the clinical freedom. Considering the complete scenario, it can be said that opportunistic behaviour thrives.

According to the findings, unstructured problems or non-programmed decision making are solved or not locally and ad hoc. The solution or experience, when obtained is not documented or shared impeding any substantial learning.

It can be said that overall structured planning and control processes do not exist. This results in independent departmental planning and control processes and also to a proliferation of goals and objectives. It is difficult or impossible to present evidence for behaviour congruence. However, it is important to highlight that the cost information, even being in its infancy, has contributed to a middle management mediation role minimally committed to the feasible regions of activity.

From this work, two direct theoretical contributions were obtained. Firstly, as discussed above, the certainty that theories of environmental influence should consider internal structures of governance when studying managerial dimensions in certain organizations. This means that contingency theory in its current form is not sufficient to understand and explain the middle management mediation role within public hospitals. The manifestation of opportunism and bounded rationality, emerging from individuals and different modes of governance, i.e. the clan and the hierarchy, are capable of driving internal actions and hence

influencing goals and activities. In this study, cost information showed to be flexible and supportive favouring the integration of both theories in the public hospital settings. Cost information acts as a translator of external influences or pressures and mitigates the differences between the clan and the hierarchy.

Thus, it is acceptable that, there is an organizational response adjusted to the particular environment, in both countries. Hospital middle managers are mediators of the whole process and are influenced by the modes of governance. This indicates a certain pragmatic and behavioural facet of planning and control processes. Another aspect to be highlighted and to be discussed later is the reinforcement of cost information as being able to be perceived coherently for a set of organizational functions by managers of both modes of governance.

The second contribution is the indicative of lack of support to Anthony's levels of managerial activity or analytical framework. Anthony (1965), in his seminal work, divided planning and control systems into three groups: Strategic Planning, Management Control and Operational Control. He set out that "... Operational Control is concerned with tasks ... the tasks to which Operational Control relates are specified, so that little or no judgement is required" (p. 18).

In turn, Otley (1994) posed that "Anthony's definition is becoming outdated and is potentially obstructive to development of the field" (p. 294). This can be observed in terms of public hospitals. According to the literature and results of this research, the above definition of Operational Control, when applied to public hospitals, is an enormous oversimplification. This point is the contact where clinicians exert their knowledge and the complex rationality emerges. The narrative knowledge impedes the tasks to which operational control relates being clearly specified. This was found, for example, during the hypotheses tests when doctors showed to change purposively activities of the procedure during a routine process. At the same time, given the direct contact doctor-to-patient or client in Brazilian hospitals, it cannot be said that little or no judgement is required. This explains, to some extent, the incompleteness of beliefs about cause/effect.

It can be said that clinical freedom and opportunistic behaviour, the latter more prominent in Brazilian hospitals interfere with operational control. A more ritual/symbolic form of control (Bourn and Ezzamel, 1986) seemed to be coherent within Brazilian hospitals.

In this case the Operational Control, described as being a repetitive and routine task without judgement, was shown to involve a more descriptive than prescriptive approach. Otley (1994) observes, in terms of Anthony's work, that "the basic source discipline for the study of control should be the behavioural sciences" (p. 290) however, it was rapidly narrowed and now it has just a "behavioural flavour" (ibid). However, what is relevant to report is that his analytical framework does not apply fully to public hospital exercise. In public hospitals, the operational control involves a behavioural and more pragmatic approach.

Therefore, in Brazilian hospitals, this is much more evident because of the strong manifestation of opportunism that emerges from the service delivery and consecutively from the relationship between modes of governance. This manifestation; which surfaces in the poor integration of the two areas of knowledge and permeates planning and control processes; gives space to the materialization of individuals' and groups' goals above organisational goals.

A form found to explain probable differences of operational control in both countries is the case-mix accounting. Case-mix accounting is recognised as being a way to provide certain environmental control over medical procedure inside hospitals. Within the healthcare sector, it links external bodies to service delivery or "product lines" (see Covaleski et al., 1993). Due to this, it is possible to assert that, the hospital front line does not support the case-mix even though they do use HRGs. This can be explained, to some extent, because this provides mechanisms that threaten the structure already installed the clan for example. The external control that presents in Great Britain and not in Brazil certainly contributes to restrain identified problems of knowledge incompleteness and inhibits opportunism and clinical freedom.

British hospitals experienced a retraction in the adoption and development of DRG-like procedure costs as part of case-mix accounting systems after 1995. This can be explained, to some extent, because of its non-use for contracting purposes, therefore, it withered after an expressive expansion in the first half of the last decade (Ellwood, 2001). However, in 1998, the National Reference Costing Exercise, which determines that every English NHS Hospital Trust report their costs using HRGs, restated its importance and progress (DoH, 1998). This will permit among others to tackle inefficiency and set up external benchmarking. This effort from the NHS Executive is considered understandable despite problems still persist, e.g.

variations in costing approaches or problems with information quality (Northcott and Llewellyn, 2001).

Cross-national conclusions

The healthcare market as an alternative model for organisations when complex and uncertain exchanges entail a considerable amount of resources was discussed in Chapter 4. Healthcare systems of both studied countries cannot be considered perfect markets as shown in chapters 2 and 3.

However, it is important to note that British managers have shown that they are still operating in a competitive environment and emphasising profit-making actions. This is not made openly. In Brazil, the market characteristics are still covered or hidden behind corporative objectives. According to an interviewed manager, in Great Britain some hospitals (the organisations) have increased their income through commercial activities, e.g. providing services to other Trusts. This is apparently not the same in Brazil (see, for example, section 8.1).

Managers are limited rational decision-makers and individuals are self-interested, particularly in hospitals. A group of these individuals, the clan, possess the technology and the production mechanisms rather than the organisation (see, for example, section 8.2.3). In this case opportunistic behaviour arises and interferes directly in the adequacy of transactions. Also, individuals have their own objectives/goals. They are grouped into internal structures, such as clans or hierarchies, sectors and areas, etc (see, for example, discussions involving Q32, Q33 and Q34). This may cause a proliferation of objectives/goals. This was clear in terms of Brazilian managers (see, for example, sections 7.2.6 and 7.2.7). Their British counterparts pursue overall organizational goals (see, for example, sections 7.2.6 and 7.2.7).

In this case, accounting information systems emerge and can assure that internal transactions are conducted efficiently in both countries and middle management mediation role committed to the feasible region of intersecting, acceptable sets of actions. Nonetheless, the focus of accounting systems is not restricted to the transaction cost. Contingency theory explained clearly how an accounting information system is conceptualised to meet the hospital structure and technology and its environment (see, for example, section 8.2.4 items 7/10/12/13). This

provides the common and feasible set of actions, since completely acceptable goals or objectives are not shared or even prioritised. British hospitals have a defined structure of planning and control (see, for example, section 8.1). The use of cost information was posed intentionally to provide an overall objective, guiding middle management mediation role within British hospitals. It also correctly emphasised managerial technologies such as benchmarking, which interferes directly with activities and not necessarily with the goals (see, for example, sections 7.2.5, 7.2.6 and 7.2.7). Brazilian managers are still living with a profusion of goals and objectives within hospitals. This is reflected in the lack of planning, on ad hoc decision-making, and more non-cybernetic mechanisms of control (see, for example, sections 7.2.5, 7.2.6 and 7.2.7).

Comparing hospital management in Great-Britain and Brazil

External complexity and environmental uncertainty permeate hospitals of both countries (see discussion, for example, in section 8.2.4 items 10/12/13). It is accepted that the external range of influences or determinations represent a rational comprehensive model and it is applied in an outside-in perspective. Governmental policy or planning is, to some extent, objectively rational with clear and well-defined elements such as cause/effects relationships, 'process' and 'outputs'.

Thus, the British Central Government has defined initiatives and general policies such as competition based on comparison, cooperation, reduction of transaction costs, clinicians and administrative managers equally accountable, devolution, etc (see Chapter 2 and section 8.1). In Brazil the ideas are applicable even though some different governmental plans or policies apply: reduction of public participation in hospitals' funding, municipalities must assume responsibility for health care, renegotiation of the payment for contracted services, etc (see Chapter 3 and section 8.1). Hospitals' top management translates these external influences into strategies and develops a rational top-down format for the middle management.

However, as far as the rational comprehensive model gains depth in hospitals' structure and systems, it comes up, in an opposite direction or a bottom-up perspective, a model essentially based on complex rationality or practice, i.e. clinicians are in the front line and they cannot think simply in rational comprehensive or managerial terms such as resource consumption or cost reduction (see chapters 7 and 8). Their position is strengthened in the individual-to-

individual relationship with the patient, who must be considered as an entity with all inherent human feelings and characteristics, and who deserves access to treatment and quality of life (see, for example, section 8.1). It is important to note that authors from the free market perspective and political economy have emphasised the crucial role played by doctors in individualising problems that may have social causes and impact on the economy as a whole.

On one side, the rational comprehensive model is put by the government and can be explained by its real necessities in terms of expenditure, involving the population as a whole. On the other, the doctor-individual patient relationship puts other priorities in the scenario, for example, groups or clans emerge with their own roles, rules and relations with external groups or associations despite all other external efforts to keep just the bureaucratic stamp (see, for example, section 7.3). So far, characteristics such as benevolence, of both national health systems, are still recognised as an issue of strong appeal and it is this underpinning that can be considered, one of the main planks of the welfare state.

The intermediate level manager, clinician or administrator, is responsible for keeping the hospital working. They are directly involved with strategic policies at one extreme and with attending patients on the other. They have to be prepared to link both extremes in an acceptable way, i.e. match rational top-down strategies with the bottom-up complex rationality of healthcare delivery practice.

They certainly have to know both situations, and they should plan and control under posed restrictions, sometimes severe ones, and also scarcity. More than this, they must keep this knowledge and disseminate it within and between hospitals. They should count with accounting information to help in doing this. Mainly cost information because it is related to resource consumption and the way those resources are consumed (see, for example, sections 7.2.5, 7.2.6, 7.2.7 and 8.2.4 item 7).

According to the findings of this research, see chapters 7 and 8, and presented in Figure 9.2, British middle managers experiment low uncertainty of objectives and goals. Considering a more sociological approach, it has been shown that hospitals' goals are understood and placed first when planning and controlling (see, for example, sections 7.2.6, 7.2.7 and 8.2.3 item 7 mainly). At the same time it was shown that British managers have relatively high uncertainty in terms of activities and outputs of the processes due to the complex rationality they are involved with. In this case, the cost information usefulness is related to answer to 'what-if'

questions and incorporate access facilities and ad hoc analysis. Accounting systems work mainly as 'answer machines' (Burchell et al., 1980). Considering this reflex in planning and control is conductive to an emphasis in the process of decision-making mainly by 'computation' (Thompson and Tuden, 1959).

Also, under a more collectivist approach, planning and control functions are seen as being channels for social hegemony and values. It is understood that concepts of rationality and efficiency are used to legitimate the circumstances of the exercise of power, influence and politics. Thus, when it plays the role based on 'complex-rationality' or 'practice', accounting becomes 'learning machines'.

In turn, Brazilian middle managers face a multiplicity of objectives/goals, which exacerbates uncertainty (see, for example, sections 7.2.5, 7.2.6, 7.2.7 and 8.2.3 items 7/10/12). The centralization and more dichotomised internal structures of governance make it difficult to understand the activities and outputs of planning and control processes. The accounting systems in this case are mainly seen as 'rationalisation machines' (Burchell et al., 1980). Cost information is essentially used to legitimate and justify actions. It permits the emergence of individual decision units and planning and control process are related to a decision strategy characterised by inspiration (Thompson and Tuden, 1959).

Figure 9.2 - Overall hospital management characteristics

Great Britain	Brazil
More decentralised	More hierarchical – centralised
Adherence to the predictive model	Low adherence to the predictive model
Overall objectives pursued	Area/sector objectives pursued
Known stages/instances of hospital planning	No hospital planning
Known stages/instances of hospital control	No hospital control
More cybernetic form of control	More non-cybernetic form of control
Transform non-structured into structured decision-making	Non-structured decision-making is pushed up though the hierarchical line
Clinicians are highly involved in the administrative structure	There are two well defined structures: clinical and administrative
Planning is a top down and bottom-up process	Planning is located within the areas and elaborated on an ad hoc basis
Control types - Routine - Expert	Control types: - Trial and error - Intuitive - Judgement - Political
Decision-making - Computation - Judgement	Decision-making: - Inspiration - Compromise
Accounting systems - Answer machine - Learning machine	Accounting systems - Rationalisation - Ammunition

The planning and control functions are defined by and carry social interaction and interpretation. It can take place between individuals, groups, or castes. In Brazilian hospitals, it suggests that the information will be used as a coercive, a bargaining, or convincing instrument. Objectives and 'means'-and-'ends' relationships are not clear. In this case systems suffer the human interference and they are not able to determine human procedure.

There are also two different situations to be considered relative to cost information use in both countries. The cost information can be prepared under the influence of 'an anticipated knowledge' of the interests or objectives and 'means'-and-'ends' relationships. The use of this cost information should appear rational. However, one can argue that the cost information can be 'prepared' before the use and thus, it 'just plays' a rational role. This indicates the use of accounting systems as 'ammunition machines' in Brazil (see, for example, sections 8.1 and 8.2.3 items 5/7). The other situation is the same cost information use, provided by the same source, but in this case, being interpreted and exploited to support both rationality and complex-rationality involved in the planning and control processes. This indicates the use of accounting systems as 'answer machines' in Great Britain (see, for example, sections 8.1 and 8.2.3 items 5 /7).

In general, the cost information, provided by the accounting systems within hospitals in both countries, is not 'clean' and absolutely free of interference and interpretations. Quite the opposite, accounting systems, as presented in Chapter 3 and discussed in chapters 7 and 8, have shown great 'ability' to survive and have been amalgamated by external and internal pressures. They have been able to reflect some 'fingerprints' of interests, objectives, 'means'-and-'ends' relationships, interpretations, reinterpretations, etc. However, it must be said that they have been also used to promote congruent behaviour when coherent goals or objectives are not possible. Furthermore, planning and control, in view of cost information use, are directly responsible for the organisational response to the external environment.

Therefore, the results presented and discussed in preceding chapters 7 and 8 illustrate that British managers are more adapted to the environmental/hospital demands than their Brazilian counterparts. As shown in the Figure 9.3, they presented those basic expectations. A higher level of standardisation with less use of different predictive models was also identified. This shows that British managers are conducting or being conducted by strategies more compatible

with the environment. These strategies were not or were weakly identified for Brazilian managers.

Figure 9.3 – Expectations for Brazilian hospital managers

Environmental Complexity and Uncertainty More non-programmed decision-making in a multidivisional structure and unclear 'means' and 'ends' relationships are expected. More mechanisms of rationalisation are demanded.	More judgement, intuition and skills of lower managers are expected and, consequently more accounting 'answers'.
	Alternatives for the objective rationalism and also application of new technologies, such as benchmarking.
	Strategies • Decentralisation • General goal alignment • Congruent behaviour • Co-operation, integration of modes of governance • Managerial commitment to the feasible region of activity

Hospitals, as multidivisional organisations, are embedded in a complex environment and are subjected to a considerable uncertainty. In such a situation, more non-programmable decision-making/problem solving is expected, which demands the decentralisation, general goal alignment among other strategies in the hospital. Figure 9.2 summarises this.

The use of cost information in planning and control

The 'cost information use' within public hospitals' planning and control can be considered an organizational dimension that influences the external environment, e.g. the Government, responds in the form of policies and technology (see, for example, sections 8.1 and 8.2.3 items 1/2/3/4). In other words, cost information is generated within the organisation and communicated to the external environment. In turn, the external environment, through groups and bodies, uses judgement, association or other procedures, such as a comparison with other organisations 'suggesting' efficiency, to feedback to the organisation. This means that accounting systems are not only contingent on environmental variables, but also shape the environment in terms of public hospitals. Accounting information will keep the middle management mediation role committed to the feasible region of intersecting, acceptable sets of actions.

According to the theory discussed in Chapter 5, orthodox planning and control techniques are designed presuming, as a starting point, that organisational systems and decision-making are objectively rational and programmable. Programmable decision-making is where constituent activities of the process are known and structured sequentially allowing its repetition

routinely. British hospitals have a defined structure of planning and control (see, for example, sections 8.1 and 8.2.3 items 1/2/3/4). Thus, the existing relationship between 'input', 'process' and 'output' is well known and it is in accordance with a predictive model. It should be noted that accounting systems are designed primarily to attend situations where the external environment is predictable and reasonably stable; managers behaviour is predictable and objectively rational; supplies/consumables, human resources and equipment are on hand; and the available information is reliable. It was shown that hospitals are organisations where these conditions are not met, principally in Brazil (see, for example, section 8.1 mainly).

Even though, in Brazil, cost information systems are functionally autonomous and organisationally independent, managers have considered it for planning and control processes. Figures presented in chapters 7 and 8 support this. In Great Britain, managers have been involved with accounting (see Chapter 2) and their perception has changed and also changed the cost information system. Managers already see the applicability of cost information contributing directly in the services delivered to the patients (see sections 8.1 and 8.2.3 items 1/2/3/4). It is important to highlight that, according to the figures presented in chapters 7 and 8, British managers do not use cost information as extensively as one would expect. However, they still positively support its use in planning and control, but they present a more balanced judgement of its usefulness. This is largely explained by the experience brought about by its continuous use.

Brazilian managers were shown to be eager or even enthusiastic about cost information use for planning and control, mainly members of the hierarchy. However, it must be said that, in Brazilian hospitals, the use of cost information is still seen as dangerous to the current state of affairs and modus operandi. One reason is relatively clear, i.e. it unveils the haphazard scenario of public hospitals, which is highly convenient to thrive opportunism (see, for example, sections 8.1 and 8.2.4). In this case the clan has complete control.

The research question

After the above discussion, the examination of the research question can be reinforced. The question posed in this research was: **Do intermediate level hospital managers in Great Britain use cost information more effectively for planning and control than their counterparts in the hospitals in Brazil?**

The core substance discussed, analysed and presented so far suggests and supports a positive answer to this question, i.e. managers in Great Britain use cost information more effectively for planning and control than their counterparts in Brazil. In other words, the use of cost information causes managerial commitment to feasible regions of activity, which encourage congruent behaviour.

This study has shown that managerialism permeating British hospitals has produced the expected response in terms of the middle management mediation role respecting both objective rationality and complex rationality. As shown before in this section, the government and other groups from the environment have considered cost information as an indicator of performance. This has influenced managerial functions. Middle managers move towards the improvement of clinical and administrative activities and, as an interviewee set out, clinicians discussing the cost of procedures decide to implement the best process. The hospital structure occupied by members of the clan facilitates this strategy. According to research findings clinicians should no longer be considered a clan in British hospitals. They are involved with the formal hierarchical structure and they present a more common (organisational) view in terms of cause/effects relationships and objectives/goals. They are assuming the hierarchy and administrative responsibility together with the planning, control and decision-making processes and no longer remain on 'islands'.

More than this, the congruence of goals leads clinicians to assume the use of cost information as an indicator for benchmarking of clinical activities and they improve treatments by themselves. Planning has assumed a long-term characteristic being produced in both ways: top down, i.e. from the strategic level to directorates and bottom up, i.e. from directorates to strategic level. Doctors are getting training to assume managerial positions and it seems that they are assuming this role.

This research presented indicatives that British managers are involved with technologies such as benchmarking, which demands acceptable levels of both objective rationality and complex rationality. They work in a decentralised way, which is a characteristic of multidivisional structures. They show behaviour congruence and have the organisational goals in mind when they are planning and controlling. Because they have been involved for a long time with cost information, they are certainly more trained and can observe the applicability of cost

information for planning and control. They also presented a more integrated managerial structure within the hospitals.

According to the results presented and analysed in chapters 7 and 8, planning and control in Brazilian hospitals can be considered 'accidental' functions. This means that they are not regularly exercised. Planning is not an integrated process within the hospital and it appears and disappears accordingly to the individual or area concerns and opportunism. Planning can be confused with improvisation or a very short-term action. This very short-term action is explained because Brazilian managers use different predictive models more often than their British counterparts, as shown in this research. It demands a constant change in internal strategy and approach caused probably by the confusion of goals and opportunistic behaviour. Hospitals in Brazil, despite being multidivisional organisations, are still centralised. However, this centralisation is just formal, because the informal network or ring of actions seems to be more pre-eminent.

Limitations of the study

When apparent, limitations of this research have been addressed in specific chapters of this thesis. However, some broad limitations of this study and implications for future research are presented below.

The first limitation is revealed by the exploratory nature of this research. Since researchers have previously devoted little time to the topic, substantive theory could only be used to guide this study. This is made clear in terms of planning and control within British and Brazilian hospitals middle management and cost information in Brazil. However, preliminary research and detailed pre and pilot-testing stages provided the validation of the adopted process and measures.

The second limitation of this study concerns the fact that the sample was collected in a representative region of both countries. It is well known that these countries have interregional disparities. Thus, regions had to be selected to make this study possible, and caution must be taken when generalising results across the countries. However, having acknowledged this limitation, this investigation covered a broad range of public hospitals and

managers in regions that represent well the countries as a whole, providing justification for the application of the research findings to other public hospitals and middle management.

A final limitation of this research is that it does not address or assess the level of success or failure of planning and control using cost information within hospitals. Instead, this research concentrates on the potential use of cost information for planning and control in terms of middle management within hospitals.

Avenues for future research

The first recommendation is the continuance of the development of a set of items/variables capable of characterising the constructs/dimensions, opportunism and bounded rationality within hospitals. These constructs/dimensions should be related to middle managers and should be tested against environmental variables providing response to the amount and ways of interference they exert within the organisation.

From the perspective of the research ***of*** accounting rather than ***in*** accounting, researchers and professionals seem to be more involved with the techniques for cost generation rather than its use, i.e. accounting as a particular sphere of practice. Therefore the change of focus from accounting techniques of cost generation to the understanding of its use in terms of influences and objectives is recommended. This must involve other environmental variables such as uncertainty and technology. Certainly, the results will be useful for the accounting techniques concerned.

A third recommendation is the examination of the use of cost information for benchmarking in Great Britain. It should be done in terms of managerial perception, which would involve both rationality and complex rationality rather than purely facts. It could be seen that much is expected from the Government in terms of the application of 'competition by comparison'. It should be also a comparative study between countries with similar healthcare systems. Following this line of thought, the nature of the benchmarking technology used within hospitals, and equally, its level of success or failure should be assessed. In terms of Brazil, despite differences in accounting technologies and cost information generation, the same study is recommended. It should be restricted to those hospitals that have shared cost information.

Another important point is the investigation in Great Britain of the validity of hospital objectives and the degree of coherence between the predictive models used and environmental variables such as population growth or ageing. This will point the presence or not of the necessary affinity of the elements of planning. Furthermore it can define the efficiency of planning and control processes within hospitals.

Due to the fact that Brazilian healthcare system has imperfect market characteristics, it is recommended to study the effects of the co-operative network between public hospitals. According to some managers, this co-operative network already exists informally and administratively in small scale. It should be evaluated in relation to middle managers.

Another important investigation should be done to evaluate probable social and economic impacts in terms of Brazilian public hospitals attending particular and insured patients. This recommendation per se can be unfolded in several other important researches, such as impacts of differences between attending SUS patients and insured patients from different point of views, i.e. hospital and public points of view for example.

Finally, it is recommended to study the process and methods that brought clinicians in Great Britain into the hierarchy. It is important to investigate the forces that firstly mitigate the barriers and secondly produced the integration of both structures of governance. The study and understanding of these forces would make it possible to learn about which skills, education or other elements work or not in the healthcare system in general and public hospitals in particular.

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Appendix A

Initial Presuppositions

Presuppositions, or propositions that do not correspond to an assertion, about the solution or problem situation (source of questions and hypotheses).

- Intermediate level managers prefer routine and programmed activities and decisions.
- Intermediate level managers live different complexities in different countries.
- They are fully concerned about supplies/consumables shortages; professional training and equipment break down.
- Managers from different backgrounds use cost information aiming at different goals in planning and control processes in different countries.
- They do not usually participate in cost information system design.
- They have strong access to cost information systems.
- The information systems are used as instruments to force decisions and problems into a structured approach.
- Intermediate level managers usually use the cybernetic model of control.
- Intermediate level managers recognise organisational goals and do not discharge the presence of individual or group goals when making decisions.
- The organisational structures are stronger than organisational processes and objectives.
- Intermediate level managers understand cost information as being able to provide benchmarking and enable development of some activities.
- The organisational general goals are clearly visible to the managers.
- The external pressure on planning and control processes is recognised by managers.
- Intermediate level managers commonly do not know which information they need to make their decisions about planning and control.
- The cost information (system) is able to help reducing differences between managers with different backgrounds.
- Internal systems are recognised as becoming more complex by intermediate level managers.
- Intermediate level managers within hospitals in Great Britain and Brazil have similar decisional behaviour on planning and control.
- Middle managers from both countries attribute different weights or scores of importance to the use of cost information, decision-making, planning and control.
- Internal complexity is related to unstructured decision making.
- Internal complexity is related to changes in the predictive model applied to planning and control.
- There is a balance between professionals of different backgrounds within hospitals.
- There are different managerial roles played by middle managers of different countries.
- Planning and control are well disseminated managerial functions within the hospitals.
- Complex rationality is mitigated by coherent goals.
- There are differences of quality in cost information between countries.

- There are no differences between different countries in terms of forms of access.
- Decision making processes varies between countries.
- Middle managers are highly involved with non-programmed decision making and problem solving.
- There are differences between programmed and structured decision making or problems solving in planning and control between managers.
- Middle managers take into account regularly cost information for decision-making and problem solving.
- Middle managers perceive the use of cost information for managerial functions differently in both countries.
- Cost information supports managerial functions irrespective of backgrounds and countries.
- Cost information supports complexity reductions.
- Cost information is positively related to administrative and clinical activity in both countries in terms of control, benchmarking and planning.
- Cost information is differently used for control and planning supplies or consumables, human resources and equipment in both countries.
- The effects of the use of cost information are directly related with elements of gains of efficiency within hospitals.
- Managers from different countries see differently the use of cost information according to rationality and complex rationality.
- Managers usually consider the time they spend planning as being sufficient.
- Managers spend less time planning than controlling.
- Managers consider differently the cost information for managerial planning of supplies or consumables, human resources and equipment in both countries.
- There are different levels of programmed and structured decision making for supplies or consumables, human resources and equipment in terms of planning in both countries.
- Managers of both countries are differently influenced when they are planning.
- There are different goals to be achieved for managers according to background, organization and structure of governance when planning.
- Managers usually consider the time they spend controlling as being sufficient.
- Managers consider differently the cost information for managerial control of supplies or consumables, human resources and equipment in both countries.
- There are different levels of programmed and structured decision making for supplies or consumables, human resources and equipment in terms of control in both countries.
- The tendency of control is the cybernetic one.
- Managers prefer the control of inputs rather than process.
- There are different goals to be achieved for managers according to background, organization and structure of governance when controlling.
- The vast majority of managers have available a long range of cost information in both countries.
- Cost information is considerably updated in both countries.

Group of initial questions developed after consideration of all presuppositions.

- Do the intermediate level managers control and plan?

- Different backgrounds interfere with goals and, consequently, decision-making and problem solving in planning and control processes?
- What is the proportion of time/thinking dedicated between control and planning?
- Which instruments do they use to get cost information to help them?
- Is the cost information (system) considered useful for control?
- Is the cost information (system) considered useful to plan?
- Are the intermediate level managers of different structures concerned about non-programmed decision-making problem solving?
- How are the indicators of cost information quality considered?
- Does the available computer system carry cost information of sufficient quality?
- Is cost information useful for uncertainty reduction?
- Who should plan in the hospital?
- Who should control in the hospital?
- What types of cost information are available to the managers of the organisation?
- What are the relationships between the operational, intermediate and strategic levels of the organisation?
- How do planning and control processes compare between the medical clan and the administrative bureaucracy?
- Does the knowledge of general goals influence planning and control processes?
- The intermediate level managers, irrespective of the structure, of the British hospitals use the Information (system) about costs more effectively than the Brazilian ones?

Group of initial hypotheses considered after all presuppositions and questions.

- Clinicians' involvement in planning and control should improve clinical development.
- Similarity of goals should enhance the applicability of cost information in control and planning within hospitals.
- Overall goals should enhance the applicability of cost information in control and planning within hospitals.
- The manager's background should influence the applicability of cost information in control and planning within hospitals.
- Public and overall objective should influence the applicability of cost information in control and planning within hospitals.
- Organisational objective influences the applicability of cost information in control and planning within hospitals.
- Managers should consider the time spent with managerial planning as being adequate.
- Managers should consider the time spent with managerial control as being adequate.
- The use of phase theorem for planning influences its use for control. This should apply for supplies/consumables.
- Managers should consider cybernetic/no cybernetic mechanisms for control supplies/consumables.
- Managers should consider cybernetic/no cybernetic mechanisms for control human resources.
- Managers should consider cybernetic/no cybernetic mechanisms for control equipment.

- Managers should consider cybernetic/no cybernetic mechanisms for control activities performed.
- Cost information should facilitate adequate decision-making in terms of resource consumption.
- Cost information should facilitate adequate decision-making in terms of clinical activity.
- Cost information should facilitate adequate decision-making in terms of cost reduction.
- Cost information should facilitate adequate decision-making in terms of control of supplies/consumables.
- Cost information should facilitate adequate decision-making in terms of control of equipment.
- The usefulness of cost information can be related to benchmarking of clinical activities.
- The usefulness of cost information can be related to benchmarking of administrative activity.
- The usefulness of cost information can be related to managerial control of supplies/consumables.
- The usefulness of cost information can be related to managerial control of human resources.
- The usefulness of cost information can be related to managerial control of equipment.
- The reduction of resource consumption should be related to uncertainty reduction provided by the cost information.
- The cost reduction should be related to the uncertainty reduction provided by the cost information.
- The usefulness of cost information should be related to its usefulness for prediction.
- Administrators should use more different predictive models when planning.
- Administrators should control supplies/consumables exploring causes.
- Administrators should control material/consumables exploring the process.
- The use of different predictive models when planning should be related with control by cause.
- The use of different predictive models when planning should be related with control by process.
- The usefulness of cost information for control of administrative activity should be related to centralisation.

Appendix B

Dimensions/Constructs, Operational definition, Details of the Questionnaire

Table 5.1 – Questionnaire Outline: summary

Dimension /Construct	Basic Reference Sources	Sections	Items/variables – Operational definition (Questionnaire)
Hospital Structure relation specific factors	Anthony, 1965; Katzner, 1999; Preliminary survey in Great Britain; Focus groups and preliminary survey in Brazil.	2.3; 3.3; 4.1; 4.2.1; 5.3.2	. Professional background (Q1) . Time working in hospitals (Q2) . Area/sector/service in charge (Q3) . Time in charge (Q4) . Position within the hospital (Q5) . Cost information (Q35a) . Resource information (uncosted) (Q35b)

Dimension /Construct	Basic Reference Sources	Sections	Items/variables – Operational definition (Questionnaire)
Organizational, Managerial Factors	Mintzberg, 1975; Lapsley, 1993; Powell, 1990; Thompson et al., 1991; Ouchi, 1977, 1979; Simon, 1976; Emmanuel et al., 1993; Thompson and Tuden, 1959; Burchell et al., 1980.	2.1; 3.1; 4.1; 4.2.1; 5.1; 5.2.1.2	. Classify function as entrepreneur (Q8a) . Classify function as disturbance handler (Q8b) . Classify function as resource allocator (Q8c) . Classify function as negotiator (Q8d) . Planning as a clinicians' task (Q32a) . Planning as an administrators' task (Q32b) . Control as a clinicians' task (Q32c) . Control as a administrators' task (Q32d) . Planning as a sector/area's task (Q32e) . Control as a sector/area's task (Q32f) . When planning or controlling - similarity of goals between individuals (Q33a) . When planning or controlling - similarity of goals between clinicians (Q33b) . When planning or controlling - similarity of goals between administrators (Q33c) . When planning or controlling - similarity of goals between clinicians and administrators (Q33d) . When planning or controlling - hospital's goals are known and being observed (Q33e)

Table 5.1 - Questionnaire Outline: summary

Dimension /Construct	Basic Reference Sources	Sections	Items/variables – Operational definition (Questionnaire)
Cost Information specific factors	Saracevic, 1970; Taylor, 1985; Davemport, 1998; Choo, 1996; Kim, 1988; Geiger, 1999; Schweikart, 1986.	5.1; 5.3.1; 5.3.3	. Accessibility (Q9) . Access by computer (Q10a) . Access by reports (Q10b) . Access by meetings (Q10c) . Access by talking to people (Q10d) . *Update ness (Q11)* . Reliability (Q12a) . Relevance (Q12b) . Clarity (Q12c) . Simplicity to consult (Q12d) . Easily to understand (Q12e) . Volume (Q12f) . Precision (Q12g)

Dimension /Construct	Basic Reference Sources	Sections	Items/variables – Operational definition (Questionnaire)
Decision-making, problem solving	Simon, 1976, 1991; Mintzberg, 1975; Tsoukas, 1995; Ashmos et al., 1996, 1998, 2000; Katzner, 1999; Lindblom, 1973; Etzioni, 1973; Thompson and Tuden, 1959; Ellwood, 2000; Lipshitz and Bar-Ilan, 1996; Burchell et. al., 1980; Roberts and Scapens, 1985; Covaleski et al., 1993; Mak, 1989.	2.2; 3.2; 4.1; 4.2.1; 5.2.1; 5.2.2; 5.3.3	. Autonomy under critical exposition (Q21a) . Advice from superiors under critical exposition (Q21b) . Advice from subordinates under critical exposition (Q21c) . Manuals consulting under critical exposition (Q21d) . Computer systems consulting under critical exposition (Q21e) . Proportion between programmed (routine) and non-programmed (non-routine) (Q22) . Know all steps/procedures decision making – in case of control of supplies/consumables (Q24a) . Know all steps/procedures decision making – in case of control of human resources (Q24b) . Know all steps/procedures decision making – in case of control of equipment (Q24c) . Know all steps/procedures decision making – in case of planning of supplies/consumables (Q30a) . Know all steps/procedures decision making – in case of planning of human resources (Q30b) . Know all steps/procedures decision making – in case of planning of equipment (Q30c)

Table 5.1 - Questionnaire Outline: summary

Dimension /Construct	Basic Reference Sources	Reference Sections	Items/variables – Operational definition (Questionnaire)
Cost information perceived usefulness and attitudes	Test Survey in Great Britain; Test Survey and Focus Groups in Brazil; Simon, 1976; Katzner, 1999; Emmanuel et. al., 1993; Ouchi, 1977, 1979; Mellet et al., 1993; Ellwood, 1996a, 1996b, 1990, 2000; Burchell et. al., 1980; Bowling, 1997; Bloomfield, 1991; Choo, 1996; Roberts and Scapens, 1985; Kim, 1988; Covaleski et al., 1993; Mak, 1989.	2.3; 3.3; 4.1; 4.2.1; 5.1.1; 5.1.2; 5.2; 5.3	. Consider Cost Information when decision making/problem solving (Q13) . For surveillance (Q14a) . For prediction (Q14b) . For control (Q14c) . For planning (Q14d) . Facilitates adequate decisions (Q15a) . Facilitates adequate planning (Q15b) . Facilitates problem solving (Q15c) . Facilitates Resource control (Q15d) . Facilitates Uncertainty reduction (Q15e) . For control on resource consuming (Q16a) . For control on clinical activity (Q16b) . For control on administrative activity (Q16c) . For benchmarking of resource consuming (Q17a) . For benchmarking clinical activity (Q17b) . For benchmarking administrative activity (Q17c) . (For) reduces elements to control (Q18) . (For) make easier control activities (Q19) . (For) Improve decision making, problem solving when planning (Q20) . For managerial control of supplies/consumables (Q23a) . For managerial control of human resources (Q23b) . For managerial control of equipment (Q23c) . For managerial planning of supplies/consumables (Q29a) . For managerial planning of human resources (Q29b) . For managerial planning of equipment (Q29c) . For planning and control provide benchmarking of clinical activities (Q34a) . For planning and control provide clinical activity progress (Q34b) . For planning and control improve clinical treatments (Q34c) . For planning and control reduce resource consuming (Q34d) . For planning and control provide cost cutting (Q34e) . For planning and control can provide training clinic professionals (Q34f) . For planning and control can provide training administrative professionals (Q34g)

Table 5.1 - Questionnaire Outline: summary

Dimension /Construct	Basic Reference Sources	Reference Sections	Items/variables – Operational definition (Questionnaire)
Managerial Planning	Anthony, 1965; Kim, 1988; Mak, 1989; Lapsley, 1993; Powell, 1990; Osborne, 1997; Ashmos et al., 1998; Mintzberg, 1975; Dant and Francis, 1998; Covaleski et al., 1993; Emmanuel et. al., 1993; Tsoukas, 1995; Otley, 1980, 1994; Hoque and Hopper, 1994; Ouchi, 1977, 1979; Emmanuel et al., 1993.	2.2; 3.2; 4.1; 4.2.1; 5.1.1; 5.3.2; 5.3.3	. Time spent (Q6a) . Judgement of time spent (Q7a) . Use of predictive models (Q28) . Consider Cost Information when planning - Supplies/consumables (Q29a) . Consider Cost Information when planning - Human resources (Q29b) . Consider Cost Information when planning - Equipment (Q29c) . Know all steps/procedures decision making – in case of planning of supplies consumables (Q30a) . Know all steps/procedures decision making – in case of planning of human resources (Q30b) . Know all steps/procedures decision making – in case of planning of equipment (Q30c) . Influencing capacity of background when planning (Q31a) . Influencing capacity of organizational objective when planning (Q31b) . Influencing capacity of objective of the public when planning (Q31c) . Influencing capacity of objective of the area/sector when planning (Q31d) . Influencing capacity of clinical objective when planning (Q31e) . When planning (or controlling) - similarity of goals between individuals (Q33a) . When planning (or controlling)- similarity of goals between clinicians (Q33b) . When planning (or controlling) - similarity of goals between administrators (Q33c) . When planning (or controlling) - similarity of goals between clinicians and administrators (Q33d) . When planning (or controlling) - hospital's goals are known and being observed (Q33e)

Table 5.1 - Questionnaire Outline: summary

Dimension /Construct	Basic Reference Sources	Reference Sections	Items/variables – Operational definition (Questionnaire)
Managerial Control	Kim, 1988; Mak, 1989; Lapsley, 1993; Powell, 1990; Osborne, 1997; Ashmos et al., 1998; Anthony, 1965; Tsoukas, 1995; Otley, 1980, 1994; Kloot, 1997; Hoque and Hopper, 1994; Marginson, 1999; Thompson and Tuden, 1959; Hofstede, 1981; Ouchi, 1977, 1979; Emmanuel et. al., 1993; Burchell et. al., 1980; Covaleski et al., 1993, Macintosh, 1994.	2.2; 3.2; 4.1; 4.2.1; 5.1.2; 5.3.2; 5.3.3	. Time spent (Q6b) . Judgement of time spent (Q7b) . Consider Cost Information when controlling - Supplies/consumables (Q23a) . Consider Cost Information when controlling - Human resources (Q23b) . Consider Cost Information when controlling - Equipment (Q23c) . Know all steps/procedures decision making – in case of control of supplies consumables (Q24a) . Know all steps/procedures decision making – in case of control of human resources (Q24b) . Know all steps/procedures decision making – in case of control of equipment (Q24c) . Control of consumed material studying causes (Q25a) . Control of consumed material changing the predictive model (Q25b) . Control of consumed material studying the process (Q25c) . Control the characteristics of the material used (Q26a) . Control the characteristics of the professionals involved (Q26b) . Control the characteristics of the equipment employed (Q26c) . Control the characteristics of the activity (Q26d) . Control mechanisms respond quickly in case of supplies/consumables (Q27a) . Control mechanisms respond quickly in case of human resources (Q27b) . Control mechanisms respond quickly in case of equipment (Q27c) . When (planning or) controlling - similarity of goals between individuals (Q33a) . When (planning or) controlling - similarity of goals between clinicians (Q33b) . When (planning or) controlling - similarity of goals between administrators (Q33c) . When (planning or) controlling - similarity of goals between clinicians and administrators (Q33d) . When (planning or) controlling - hospital's goals are known and being observed (Q33e)

Appendix C

Covering Letter and Questionnaire applied in Great Britain

ASTON
BUSINESS SCHOOL

Marcio Augusto Goncalves
SW 11 Room 1111
Aston Research Centre
Birmingham - B4 7ET
e-mail: goncalma@aston.ac.uk

October 2000

Dear Manager;

SURVEY: THE USE OF COST INFORMATION FOR PLANNING AND CONTROL

I am a Brazilian Phd student and I am conducting research at Aston Business School on the use of cost information within hospitals for planning and control by middle managers. The following questionnaire forms the central component of my PhD research without which I shall be unable to complete my studies, consequently I thank you very much in anticipation of your response.

The questionnaire, which should take approximately 30 minutes to complete, is designed to gather information relating to UK hospital management.

Your individual responses will be completely confidential and the information you provide, as an individual will not be divulged to any other individual or organisation.

Thank you again for your help and support. Should you wish to receive a word processed (MS Word) disk containing a summary of my final thesis (expected late 2001) including the composite findings of this survey, please tick here: ☐

Marcio Augusto Goncalves
PhD Candidate

Characterising the Respondent

1. What is your background:

( ) Clinician – degree/professional qualification: _____
( ) Administrative – degree/professional qualification: _____
( ) Both – degree/professional qualification in: _____
and in: _____

2. How long have you worked in hospitals?
_____ years.

3. Which Area/Sector/Service are you in charge?
_____

4. How long have you been in charge of this Area/Sector/Service?
_____

5. What is your position within the hospital?

( ) Board Director
( ) Middle Management (Head of Department, Deputy, other)
( ) Other

6. The managerial work is divided into several functions, including planning and control.

a. How do you spend your managerial time in terms of planning?

0% of the time		*50 %*		*100% of the time*
[ ]	[ ]	[ ]	[ ]	[ ]

b. How do you spend your managerial time in terms of control?

0% of the time		*50 %*		*100% of the time*
[ ]	[ ]	[ ]	[ ]	[ ]

7. Do you think the managerial time you spend:

a. planning is:

Totally Inadequate				*Completely Adequate*
[ ]	[ ]	[ ]	[ ]	[ ]

b. with control is:

Totally Inadequate				*Completely Adequate*
[ ]	[ ]	[ ]	[ ]	[ ]

8. How do you classify the exercise of your function as:

a. Entrepreneur

Very Rarely				*Very Frequently*
[ ]	[ ]	[ ]	[ ]	[ ]

b. Disturbance handler

Very Rarely				*Very Frequently*
[ ]	[ ]	[ ]	[ ]	[ ]

c. Resource allocator

Very Rarely				*Very Frequently*
[ ]	[ ]	[ ]	[ ]	[ ]

d. Negotiator

Very Rarely				*Very Frequently*
[ ]	[ ]	[ ]	[ ]	[ ]

Characterising the Access to Cost Information

9. Do you have access to information about costs and resource consumption in treatments or clinical specialities?

Restricted Access				*Total Access*
[]	[]	[]	[]	[]

10. How do you access it?

	Less than monthly		*Weekly*		*Daily*
a. By Computer	[]	[]	[]	[]	[]
b. Reports	[]	[]	[]	[]	[]
c. Meetings	[]	[]	[]	[]	[]
d. Talking to people	[]	[]	[]	[]	[]

11. Is the cost information that you access being updated satisfactorily?

( ) Yes
( ) No
( ) Do not know

Characterising the Cost Information System

12. Characterise the cost information (you have access), considering your managerial function, in terms of its:

a. Reliability:

Too Low				*Too High*
[]	[]	[]	[]	[]

b. Relevance:

Totally Insignificant				*Completely Significant*
[]	[]	[]	[]	[]

c. Clarity:

Too Obscure				*Very Clear*
[]	[]	[]	[]	[]

d. Simplicity to Consult:

Confusing				*Very Simple*
[]	[]	[]	[]	[]

e. Easily to understand:

None Understandable				*Completely Understandable*
[]	[]	[]	[]	[]

f. Volume (amount of information):

Totally Inappropriate				*Completely Appropriate*
[]	[]	[]	[]	[]

g. Precision:

Imprecise				*Very Precise*
[]	[]	[]	[]	[]

13. Do you consider (involve) the cost information in your problem solving/decision-making process?

Very Rarely		*Medium*		*Frequently*
[]	[]	[]	[]	[]

14. Do you think the cost information is useful for:

	Totally Useless		*No opinion*		*Very Useful*
a. Surveillance	[]	[]	[]	[]	[]
b. Prediction	[]	[]	[]	[]	[]
c. Control	[]	[]	[]	[]	[]
d. Planning	[]	[]	[]	[]	[]

15. Do you agree that the cost information (and/or the budget) facilitates:

	Strongly Disagree		*No Opinion*		*Strongly Agree*
a. Adequate decisions	[]	[]	[]	[]	[]
b. Adequate planning	[]	[]	[]	[]	[]
c. Problem solving	[]	[]	[]	[]	[]
d. Resource control	[]	[]	[]	[]	[]
e. Uncertainty reduction	[]	[]	[]	[]	[]

16. How do you consider the usefulness of the cost information (and/or the budget) for control/surveillance:

	Totally Useless				*Very Useful*
a. On resource consuming	[]	[]	[]	[]	[]
b. On clinical activity	[]	[]	[]	[]	[]
c. On administrative activity	[]	[]	[]	[]	[]

17. How do you consider the usefulness of cost information (and/or the budget) for benchmarking of:

	Totally Useless				*Very Useful*
a. Resource consuming	[]	[]	[]	[]	[]
b. Clinical activity	[]	[]	[]	[]	[]
c. Administrative activity	[]	[]	[]	[]	[]

18. Do you agree that the use of a computerised information cost system reduces the number of elements to control?

Strongly Disagree		*No Opinion*		*Strongly Agree*
[]	[]	[]	[]	[]

19. Do you consider that the use of a computerised costing information system can make it easier to control activities performed?

( ) Yes
( ) No
( ) No opinion

Decision-making and/or Problem solving

20. Would you agree that the cost information improve your decision-making/problem solving when you are planning?

Strongly Disagree [ ] [ ] *No opinion* [ ] [ ] *Strongly Agree* [ ]

21. When you are facing a situation in the decision-making/problem solving process that you consider critical, do you:

a. Decide/solve it anyway and communicate it?

Very Rarely [ ] [ ] *Medium* [ ] [ ] *Very Frequently* [ ]

b. Look for advice from superiors?

Very Rarely [ ] [ ] *Medium* [ ] [ ] *Very Frequently* [ ]

c. Look for advice from subordinates?

Very Rarely [ ] [ ] *Medium* [ ] [ ] *Very Frequently* [ ]

d. Consult Manuals/Guidelines?

Very Rarely [ ] [ ] *Medium* [ ] [ ] *Very Frequently* [ ]

e. Consult Computer systems?

Very Rarely [ ] [ ] *Medium* [ ] [ ] *Very Frequently* [ ]

22. What is the proportion between routine and non-routine decisions you usually make?

100 % Routine [ ] [ ] *50% of each* [ ] [ ] *100 % Non-routine* [ ]

23. How do you consider the cost information (and/or the budget) as an element for managerial control in terms of:

		Totally Irrelevant				*Perfectly Relevant*
a. Supplies/ Consumables	Such as: Waste or Misappropriation	[]	[]	[]	[]	[]
b. Human Resources	Example: Professional Sub-optimal use or Poor training	[]	[]	[]	[]	[]
c. Equipment	Ex: Disregard, equipment over/under Utilisation or Poor Installation	[]	[]	[]	[]	[]

24. When you have a managerial problem/decision, do you know all the steps/procedures to solve it? In case of control:

		Totally Unknown				*Perfectly Known*
a. Supplies/ Consumables	Such as: Waste or Misappropriation	[]	[]	[]	[]	[]
b. Human Resources	Example: Professional Sub-optimal use or Poor training	[]	[]	[]	[]	[]
c. Equipment	Ex: Disregard or Equipment over/under Utilisation or Poor Installation	[]	[]	[]	[]	[]

25. Do you act to control/monitor the consumed materials:

a. Studying the causes?

Very Rarely [] [] [] [] *Very Frequently* []

b. Changing the predictive (anticipation) model?

Very Rarely [] [] [] [] *Very Frequently* []

c. Studying the process?

Very Rarely [] [] [] [] *Very Frequently* []

26. When you are controlling and you find a problem, do you review:

a. The characteristics of the material used?

Very Rarely [] [] [] [] *Very Frequently* []

b. The characteristics of the professionals involved?

Very Rarely [] [] [] [] *Very Frequently* []

c. The characteristics of the equipment employed?

Very Rarely [] [] [] [] *Very Frequently* []

d. The characteristics of the activity?

Very Rarely [] [] [] [] *Very Frequently* []

27. Do you consider that the control mechanisms to be capable of responding quickly in case of:

		Low Responsiveness		*No Opinion*		*Very Responsive*
a. Supplies/ Consumables	Such as: Waste or Misappropriation	[]	[]	[]	[]	[]
b. Human Resources	Ex.: Professional sub-optimal use or Poor training	[]	[]	[]	[]	[]
c. Equipment	Ex: Disregard or Equipment over/ under Utilisation or Poor Installation	[]	[]	[]	[]	[]

Characterising Managerial Planning

28. Have you used different predictive models (any instrument to help anticipation) when planning?

Never				*Always*
[]	[]	[]	[]	[]

29. How do you consider the cost information (and/or the budget) as an element for managerial planning in terms of:

		Totally Useless		*No opinion*		*Very Useful*
a. Supplies/ Consumables	Such as: Dimension of Stocks or Supply Contracts or Internal/External negotiation or Consuming Expectation	[]	[]	[]	[]	[]
b. Human Resources	Example: Training Programs or Work Teams or Better use of Available Professionals	[]	[]	[]	[]	[]
c. Equipment	Ex.: Periodical Maintenance or Replacement of equipment and components	[]	[]	[]	[]	[]

30. When you face a managerial problem/decision, do you know the steps/procedures to solve it? In case of planning:

		Totally Unknown				*Perfectly Known*
a. Supplies/ Consumables	Such as: Dimension of Stocks or Supply Contracts or Internal/External negotiation or Consuming Expectation	[]	[]	[]	[]	[]
b. Human Resources	Example: Training Programs or Work Teams or Better use of Available Professionals	[]	[]	[]	[]	[]
c. Equipment	Ex.: Periodical Maintenance or Replacement of equipment and components	[]	[]	[]	[]	[]

31. When you are planning, please characterise the influencing capacity of:

	Low Capacity		*Medium*		*High Capacity*
a. Your Background	[]	[]	[]	[]	[]
b. Organisational Objective	[]	[]	[]	[]	[]
c. Objective of the Public	[]	[]	[]	[]	[]
d. Objective of the area/sector	[]	[]	[]	[]	[]
e. Clinical Objective	[]	[]	[]	[]	[]

Hospital and Managerial Planning and Control

32. In terms of managerial behaviour, would you say that in this hospital:

	Strongly Disagree				*Strongly Agree*
a. Planning is a clinicians' task	[]	[]	[]	[]	[]
b. Planning is an administrators' task	[]	[]	[]	[]	[]
c. Control is a clinicians' task	[]	[]	[]	[]	[]
d. Control is an administrators' task	[]	[]	[]	[]	[]
e. Planning is a sector/area's task (Example: Planning Department)	[]	[]	[]	[]	[]
f. Control is a sector/area's task (Example: Control Department)	[]	[]	[]	[]	[]

33. When hospital managers are planning or controlling, do you agree that:

	Strongly Disagree		*No Opinion*		*Strongly Agree*
a. Individuals pursue similar goals	[]	[]	[]	[]	[]
b. Clinicians pursue similar goals	[]	[]	[]	[]	[]
c. Administrators pursue similar goals	[]	[]	[]	[]	[]
d. Clinicians and administrators pursue similar goals	[]	[]	[]	[]	[]
e. The hospital's goals are known and observed	[]	[]	[]	[]	[]

34. Do you agree that the use of cost information in control and planning within hospitals can provide:

	Strongly Disagree				*Strongly Agree*
a. A Benchmarking of Clinical activities	[ ]	[ ]	[ ]	[ ]	[ ]
b. Clinical activity progress	[ ]	[ ]	[ ]	[ ]	[ ]
c. Improve clinical treatments	[ ]	[ ]	[ ]	[ ]	[ ]
d. Reduce resource consuming	[ ]	[ ]	[ ]	[ ]	[ ]
e. Cost cutting	[ ]	[ ]	[ ]	[ ]	[ ]
f. Training clinic professionals	[ ]	[ ]	[ ]	[ ]	[ ]
g. Training administrative Professionals	[ ]	[ ]	[ ]	[ ]	[ ]

Hospital Cost and Resource Information

35 – Would you please indicate the information that is currently available for hospital managers?

a. Cost Information:
( ) Casemix costing system (based on categories such as HRG/ICD9/Reed or any other)
( ) Budget statements – integrated with patient activity data
( ) Budget statements
( ) HRG (reference) costs
( ) HRG prospective cost/price
( ) Staff costs
( ) Drug costs
( ) Laboratory costing system
( ) Radiology cost
( ) Theatre cost
( ) Other: _____

b. Resource information (uncosted)
( ) Casemix systems
( ) Nursing dependency
( ) Pharmacy issues
( ) Theatre usage
( ) Pathology relative value system
( ) Radiology relative value system
( ) Other: _____

Thank you, again.

If possible could you please suggest two or three names of managers (Head of Department, Deputy, etc.) of this hospital who would be willing to help answering a similar questionnaire? I will send them a copy with the same content.

A. _____

B. _____

C. _____

Appendix D

Covering Letter and Questionnaire applied in Brazil

ASTON
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Belo Horizonte, 15 de Janeiro de 2001

Prezado Gerente;

PESQUISA: O USO DA INFORMACÃO SOBRE CUSTOS NO PLANEJAMENTO E CONTROLE

Sou um estudante brasileiro fazendo doutorado na Aston Business School, Grã-Bretanha, sobre o uso das informações sobre custos para o planejamento e o controle pela média gerência dos hospitais. O questionário que se segue é o componente central da minha pesquisa de doutorado, sem o qual estarei impossibilitado de completar meus estudos. Consequentemente, agradeço antecipadamente por sua resposta.

O questionário, que leva aproximadamente 30 minutos para ser respondido, está projetado para recolher informações relativas ao gerenciamento hospitalar no Brasil. O mesmo modelo já foi aplicado anteriormente na Grã-Bretanha.

Suas respostas são consideradas completamente confidenciais e as informações individuais passadas por você não serão divulgadas para nenhuma outra pessoa ou organização em nenhuma circunstância.

Muito obrigado novamente por sua ajuda e seu apoio. Se você desejar receber um disquete contendo uma cópia sumarizada da minha tese (prevista para o final deste ano), em Microsoft Word, incluindo os resultados obtidos a partir destes questionários, por favor assinale aqui: ☐

Márcio Augusto Gonçalves
PhD Candidate

Caracterizando o Respondente

1. Qual é sua formação acadêmica (técnica, graduação, pós-graduação)?
( ) Medicina, enfermagem, fisioterapia, fonoaudiologia, etc. (ciências biológicas)
diploma em: _____
( ) Administração, estatística, contabilidade, economia, etc. (outras ciências)
diploma em: _____
( ) Ambos – diploma em: _____
e em: _____

2. Há quanto tempo você trabalha em hospitais?
_____ anos.

3. Por qual departamento/setor/serviço você está responsável?
_____

4. Há quanto tempo você é responsável por este departamento/setor/serviço?
_____

5. Qual é sua posição dentro do hospital?
( ) Directoria
( ) Média Gerência (Chefe de Departamento, Encarregado, Coordenador, etc.)
( ) Outra

6. O trabalho gerencial é dividido em várias funções, incluindo a função planejamento e a função controle.

a. Quanto do seu tempo (gerencial) é gasto com planejamento?

0% do tempo		*50 %*		*100% do tempo*
[]	[]	[]	[]	[]

b. Quanto do seu tempo (gerencial) é gasto com controle?

0% do tempo		*50 %*		*100% do tempo*
[]	[]	[]	[]	[]

7. Você acha que o tempo que você gasta:

a. planejando é:

Totalmente Inadequado				*Completamente Adequado*
[]	[]	[]	[]	[]

b. controlando é:

Totalmente Inadequado				*Completamente Adequado*
[]	[]	[]	[]	[]

8. Com que freqüência você exerce, dentro de seu trabalho gerencial, o papel de:

a. Empreendedor

Muito raramente				*Muito freqüentemente*
[]	[]	[]	[]	[]

b. Solucionador de distúrbios (conflitos)

Muito raramente				*Muito freqüentemente*
[]	[]	[]	[]	[]

c. Alocador de recursos orçamentários

Muito raramente				*Muito freqüentemente*
[]	[]	[]	[]	[]

d. Negociador

Muito raramente				*Muito freqüentemente*
[]	[]	[]	[]	[]

Caracterizando o Acesso às Informações sobre Custos

9. Você tem acesso às informações sobre custos e/ou consumo de recursos nos procedimentos médico-hospitalares (tratamentos, atendimentos, atividades clínicas, etc.)?

Acesso restrito				*Acesso total*
[]	[]	[]	[]	[]

10. Com que freqüência você acessa ou obtém estas informações?

	Nunca	*Anual*	*Mensal*	*Semanal*	*Diária*
a. Por computador	[]	[]	[]	[]	[]
b. Relatórios	[]	[]	[]	[]	[]
c. Reuniões	[]	[]	[]	[]	[]
d. Conversando com outras pessoas	[]	[]	[]	[]	[]

11. As informações sobre custos que você acessa ou obtém são atualizadas satisfatoriamente?

( ) Sim
( ) Não
( ) Não sei

Caracterizando as Informações sobre Custos

12. Caracterize as informações sobre custos (que você acessa ou obtém), considerando seu trabalho gerencial, quanto à:

a. Confiabilidade:

Muito baixa				*Muito alta*
[ ]	[ ]	[ ]	[ ]	[ ]

b. Relevância:

Totalmente Insignificante				*Completamente Significante*
[ ]	[ ]	[ ]	[ ]	[ ]

c. Clareza:

Muito obscuro				*Muito claro*
[ ]	[ ]	[ ]	[ ]	[ ]

d. Simplicidade para consulta:

Muito confuso				*Muito simples*
[ ]	[ ]	[ ]	[ ]	[ ]

e. Facilidade para compreensão:

Nenhuma compreensão				*Completamente compreensível*
[ ]	[ ]	[ ]	[ ]	[ ]

f. Quantidade (volume de informação):

Totalmente inapropriado				*Completamente apropriado*
[ ]	[ ]	[ ]	[ ]	[ ]

g. Precisão:

Muito Impreciso				*Muito preciso*
[ ]	[ ]	[ ]	[ ]	[ ]

13. Você considera (ou envolve) as informações sobre custos em seus processos de solução de problemas/tomada de decisão?

Muito raramente		*Médio*		*Freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

14. Você considera informações sobre custos importantes para:

	Totalmente inútil		*Sem opinião*		*Muito útil*
a. Vigilância*	[ ]	[ ]	[ ]	[ ]	[ ]
b. Previsão	[ ]	[ ]	[ ]	[ ]	[ ]
c. Controle	[ ]	[ ]	[ ]	[ ]	[ ]
d. Planejamento	[ ]	[ ]	[ ]	[ ]	[ ]

* Descaso, apropriação indébita, desperdício, etc.

15. Você concorda que informações sobre custos (e/ou informações orçamentárias) promovem:

	Discordo fortemente		*Sem opinião*		*Concordo fortemente*
a. Decisões adequadas	[ ]	[ ]	[ ]	[ ]	[ ]
b. Planejamento adequado	[ ]	[ ]	[ ]	[ ]	[ ]
c. Solução de problemas	[ ]	[ ]	[ ]	[ ]	[ ]
d. Controle de recursos	[ ]	[ ]	[ ]	[ ]	[ ]
e. Redução da incerteza	[ ]	[ ]	[ ]	[ ]	[ ]

16. Como você considera a utilidade das informações sobre custos (e/ou informações orçamentárias) no controle/vigilância:

	Totalmente inútil				*Muito útil*
a. Do consumo de recursos	[ ]	[ ]	[ ]	[ ]	[ ]
b. Dos procedimentos médico-hospitalares	[ ]	[ ]	[ ]	[ ]	[ ]
c. Das tarefas administrativas	[ ]	[ ]	[ ]	[ ]	[ ]

17. Como você considera a utilidade das informações sobre custos (e/ou informações orçamentárias) para o comparação entre hospitais de:

	Totalmente inútil				*Muito útil*
a. Consumo de recursos	[ ]	[ ]	[ ]	[ ]	[ ]
b. Procedimentos médico-hospitalares	[ ]	[ ]	[ ]	[ ]	[ ]
c. Tarefas administrativas	[ ]	[ ]	[ ]	[ ]	[ ]

18. Você concorda que o uso de um sistema computadorizado de informações sobre custos reduz o número de elementos para controlar num processo?

Discordo fortemente		*Sem opinião*		*Concordo fortemente*
[ ]	[ ]	[ ]	[ ]	[ ]

19. Você considera que o uso de um sistema computadorizado de informações sobre custos facilita o controle das atividades desenvolvidas no hospital?

( ) Sim
( ) Não
( ) Sem opinião

Caracterizando a Tomada de Decisão e/ou Solução de Problemas

20. Você concorda que informações sobre custos melhoram sua tomada de decisão/solução de problemas quando você está planejando?

Discordo fortemente		*Sem opinião*		*Concordo fortemente*
[ ]	[ ]	[ ]	[ ]	[ ]

21. Quando você está diante de uma situação crítica no processo de tomada de decisão/solução de problemas, você:

a. Decide/resolve a mesma a seu critério e então comunica sua decisão?

Muito raramente		*Médio*		*Muito freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

b. Procura por conselhos dos superiores hierárquicos?

Muito raramente		*Médio*		*Muito freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

c. Procura por conselhos dos subordinados?

Muito raramente		*Médio*		*Muito freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

d. Consulta manuais/diretrizes?

Muito raramente		*Médio*		*Muito freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

e. Consulta sistemas computacionais?

Muito raramente		*Médio*		*Muito freqüentemente*
[ ]	[ ]	[ ]	[ ]	[ ]

22. Qual é a proporção entre decisões rotineiras e não-rotineiras que você toma normalmente?

100 % rotineiras		*50% de cada*		*100 % não-rotineiras*
[ ]	[ ]	[ ]	[ ]	[ ]

Caracterizando o Controle Gerencial

23. Quando você exerce a função de controle (sobre suprimentos, recursos humanos e equipamentos), como você considera a relevância das informações sobre custos (e/ou informações orçamentárias)?

		Totalmente irrelevante				*Perfeitamente relevante*
a. Suprimentos/ Itens de Consumo	Tais como: desperdício, apropriação indébita	[ ]	[ ]	[ ]	[ ]	[ ]
b. Recursos Humanos	Exemplo: Pouca utilização da capacidade dos profissionais, treinamento inadequado	[ ]	[ ]	[ ]	[ ]	[ ]
c. Equipamentos	Ex: Desleixo, sub ou superutilização, instalação inadequada	[ ]	[ ]	[ ]	[ ]	[ ]

24. Quando você tem um problema/tomada de decisão gerencial, você conhece todos os passos/procedimentos a seguir para resolvê-lo? No caso do controle de:

		Totalmente desconhecido				*Perfeitamente conhecido*
a. Suprimentos/ Itens de Consumo	Tais como: desperdício, apropriação indébita	[ ]	[ ]	[ ]	[ ]	[ ]
b. Recursos Humanos	Exemplo: Pouca utilização da capacidade dos profissionais, treinamento inadequado	[ ]	[ ]	[ ]	[ ]	[ ]
c. Equipamentos	Ex: Desleixo, sub ou superutilização, instalação inadequada	[ ]	[ ]	[ ]	[ ]	[ ]

25. Você age para controlar/monitorar os materiais de consumo:

a. Estudando as causas?

Muito raramente [ ] [ ] [ ] [ ] [ ] *Muito freqüentemente*

b. Modificando o modelo preditivo (usado para antever resultados)?

Muito raramente [ ] [ ] [ ] [ ] [ ] *Muito freqüentemente*

c. Estudando as características do processo?

Muito raramente [ ] [ ] [ ] [ ] [ ] *Muito freqüentemente*

26. Quando você está controlando e encontra um problema, você revê:

a. As características dos materiais usados no processo?

Muito raramente [] [] [] [] [] *Muito freqüentemente*

b. As características dos profissionais envolvidos no processo?

Muito raramente [] [] [] [] [] *Muito freqüentemente*

c. As características dos equipamentos empregados no processo?

Muito raramente [] [] [] [] [] *Muito freqüentemente*

d. As características das atividades do processo?

Muito raramente [] [] [] [] [] *Muito freqüentemente*

27. Você considera que os mecanismos de controle são capazes de responder rapidamente no caso de:

		Resposta muito lenta		*Sem opinião*		*Resposta muito rápida*
a. Suprimentos/ Itens de Consumo	Tais como: desperdício, apropriação indébita	[]	[]	[]	[]	[]
b. Recursos Humanos	Exemplo: Pouca utilização da capacidade dos profissionais, treinamento inadequado	[]	[]	[]	[]	[]
c. Equipamentos	Ex: Desleixo, sub ou superutilização, instalação inadequada	[]	[]	[]	[]	[]

Caracterizando o Planejamento Gerencial

28. Você utilizou diferentes modelos preditivos (qualquer instrumento ou mecanismo usado para antever situações futuras) enquanto planejava?

Nunca [] [] [] [] [] *Sempre*

29. Quando você exerce a função de planejamento (sobre suprimentos, recursos humanos e equipamentos), como você considera a utilidade das informações sobre custos (e/ou as informações orçamentárias)?

		Totalmente inútil		*Sem opinião*		*Completamente útil*
a. Suprimentos/ Itens de Consumo	Tais como: dimensão de estoques, contratos de fornecimento, negociação interna/externa, expectativa de consumo	[]	[]	[]	[]	[]
b. Recursos Humanos	Exemplo: programas de treinamento, grupos de trabalho, melhor uso dos profissionais disponíveis	[]	[]	[]	[]	[]
c. Equipamentos	Ex.: Manutenção periódica, substituição de equipamento e componentes	[]	[]	[]	[]	[]

30. Quando você está diante de um problema/tomada de decisão gerencial, você conhece os passos/procedimentos a seguir para resolvê-lo? No caso do planejamento envolvendo:

		Totalmente Desconhecidos				*Perfeitamente conhecidos*
a. Suprimentos/ Itens de Consumo	Tais como: dimensão de estoques, contratos de fornecimento, negociação interna/externa, expectativa de consumo	[]	[]	[]	[]	[]
b. Recursos Humanos	Exemplo: programas de treinamento, grupos de trabalho, melhor uso dos profissionais disponíveis	[]	[]	[]	[]	[]
c. Equipamentos	Ex.: Manutenção periódica, substituição de equipamento e componentes	[]	[]	[]	[]	[]

31. Quando você está planejando, por favor caracterize a capacidade de influência neste planejamento da(os):

	Baixa Capacidade		*Médio*		*Alta Capacidade*
a. Sua formação acadêmica	[]	[]	[]	[]	[]
b. Objetivos organizacionais	[]	[]	[]	[]	[]
c. Objetivos do público	[]	[]	[]	[]	[]
d. Objetivos do seu departamento/setor/serviço	[]	[]	[]	[]	[]
e. Objetivos clínicos	[]	[]	[]	[]	[]

Caracterizando o Planejamento e Controle Gerencial no Hospital

32. Em termos de comportamento gerencial, você diria que neste hospital:

	Discordo fortemente				*Concordo fortemente*
a. Planejar é uma tarefa do corpo clínico	[]	[]	[]	[]	[]
b. Planejar é uma tarefa do corpo administrativo	[]	[]	[]	[]	[]
c. Controle é uma tarefa do corpo clínico	[]	[]	[]	[]	[]
d. Controle é uma tarefa do corpo administrativo	[]	[]	[]	[]	[]
e. Planejar é uma tarefa de um departamento/setor administrativo (Exemplo: Departamento de Planejamento)	[]	[]	[]	[]	[]
f. Controle é uma tarefa de um departamento/setor (Exemplo: Departamento de Controle)	[]	[]	[]	[]	[]

33. Quando os gerentes hospitalares estão exercendo as funções de planejamento ou controle, você concorda que:

	Discordo fortemente		*Sem opinião*		*Concordo fortemente*
a. os Indivíduos têm objetivos semelhantes	[]	[]	[]	[]	[]
b. os Profissionais do corpo clínico têm objetivos semelhantes	[]	[]	[]	[]	[]
c. os Profissionais do corpo administrativo têm objetivos semelhantes	[]	[]	[]	[]	[]
d. os Profissionais do corpo clínico e profissionais do corpo administrativo têm objetivos semelhantes	[]	[]	[]	[]	[]
e. Os objetivos do hospital são conhecidos e observados	[]	[]	[]	[]	[]

34. Você concorda que o uso de informações sobre custos no planejamento e controle dentro de hospitais possa fornecer:

	Discordo fortemente				*Concordo fortemente*
a. Comparação entre procedimentos médico-hospitalares	[]	[]	[]	[]	[]
b. Acompanhamento da execução de procedimentos médico-hospitalares	[]	[]	[]	[]	[]
c. Melhoria dos procedimentos médico-hospitalares	[]	[]	[]	[]	[]
d. Redução do consumo de recursos	[]	[]	[]	[]	[]
e. Redução de custos	[]	[]	[]	[]	[]
f. Treinamento de profissionais do corpo clínico	[]	[]	[]	[]	[]
g. Treinamento de profissionais do corpo administrativo	[]	[]	[]	[]	[]

Informações sobre Custos Hospitalares e sobre Recursos Consumidos

35. Você poderia indicar as informações sobre custos que estão atualmente disponíveis para os gerentes do hospital?

a. Informações sobre custos:
( ) Planilhas de Custo Mensal
( ) Diretrizes orçamentárias – Mensal
( ) Diretrizes orçamentárias - Anual
( ) Custo de Medicamentos
( ) Custo de Pessoal
( ) Custo Laboratorial
( ) Custo Radiológico
( ) Custo de Centro Cirúrgicos
( ) Outro: _____

b. Informações sobre recursos consumidos (não custeados)
( ) Nível de estoques da Farmácia
( ) Nível de estoques do Almoxarifado
( ) Quantidade de Exames Patológicos
( ) Quantidades de Exames radiológicos
( ) Outros: _____

Muito obrigado mais uma vez.

Se possível, você poderia sugerir dois ou três nomes de gerentes (chefe de departamento, encarregado, etc.) deste hospital que estariam dispostos a ajudar preenchendo um questionário similar? Eu lhes enviarei uma cópia com o mesmo conteúdo.

A. _____

B. _____

C. _____

Appendix E

Letter introducing the Questionnaire

ASTON
BUSINESS SCHOOL

Marcio Augusto Goncalves
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Aston Research Centre
Birmingham - B4 7ET
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October 2000

Dear Manager;

SURVEY: THE USE OF COST INFORMATION FOR PLANNING AND CONTROL

I am a Brazilian Phd student and I am conducting research at Aston Business School on the use of cost information within hospitals for planning and control by middle managers. The following questionnaire forms the central component of my PhD research without which I shall be unable to complete my studies, consequently I thank you very much in anticipation of your response.

The questionnaire, which should take approximately 30 minutes to complete, is designed to gather information relating to UK hospital management.

Your individual responses will be completely confidential and the information you provide, as an individual will not be divulged to any other individual or organisation.

Thank you again for your help and support. Should you wish to receive a word processed (MS Word) disk containing a summary of my final thesis (expected late 2001) including the composite findings of this survey, please tick here: ☐

Marcio Augusto Goncalves
PhD Candidate

Appendix F

Interview Protocol

General Introductory Remarks

First of all thank you very much for this time, I would like to thank you for this interview. I will try do not disturb you too much (it will not be long).

Everything you say has value to my research. You can answer based in your: perception, experience, attitude, judgement, opinion.

Can we start? I am interested basically in your planning and control functions.

1 – Talk to me please, about your planning process (any anticipation process).

- Do you meet people? Who? (Do you do it alone)
- Do you consult any information system? (Do you consider the cost information when you are planning? Why? How?
- Is your planning process repetitive?
- Which model/instrument/process do you use to predict (anticipate) when you are planning?
- What are your objectives when you are planning?
- Do you always reach those objectives?

2 – Do you control what you have planned?

- Do you use cost information when you are controlling? Why? How?
- If any problem occurs how do you (act to) solve it? (Structured/programmed or non-structured/non-programmed?)

3 – Do you consider accounting systems an adequate instrument for planning and control? How? Why?

4 – Do clinician managers and administrative managers plan and control in the same way (or differently)? How? Why?

- Do they use different methods (processes)?
- Do they use different data sources and/or criteria?
- Do they pursue similar goals?

5 – When you are deciding, do you follow the same process? Is it a routine?

- Could you give any example of decisions you have made or problem you have solved and how was it made? Programmed or non-programmed?
- Have you considered the cost information in this case?

6 – There is anything else you would like to say or complement?

General Final Remarks

Thank you very much for your time. It was very useful. Have you got any question? I would like answer any question you should have.

Appendix G

Letter to Chief Executives in Great Britain[1]

[1] A translated letter was sent to Brazilian Chief Executives.

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XXX
Chief Executive
XXX NHS Trust
XXX
XXX
XXX

30 October 2000

Dear <name>;

RESEARCH: THE USE OF COST INFORMATION FOR PLANNING AND CONTROL

I am a Brazilian Phd student conducting comparative research at Aston Business School. My research is focused on the issue of how hospital managers formulate strategies to arrive at decisions and solve problems in planning and control.

I do understand that you and your colleagues are very busy, but I hope that my research will facilitate the development of tools and methodology that one day may help healthcare managers in the UK and Brazil. The research aims to improve the understanding of how leading decision-makers like you approach the process.

I have discussed my project with Dr. Rupert Davies at the NHS Executive – West Midlands and he has suggested that your Trust may be a suitable organisation on which to base some of my research. My study includes interviews of middle managers in a cross-section of hospitals and I consider this hospital to be an ideal representative of the "cost-efficient" sector as shown by its position in the National Reference Cost Index.

I wish to call upon only a small number of your managers targeted across Personnel, Supplies, Medical and Other Clinical Staff. The interviews will be brief, around 40 minutes. I would like to contact these managers directly and I take this opportunity to thank you and your staff in advance for your collaboration in this important project. I assure you that all information obtained will be considered confidential and will be published only in summary form in such a way that individual managers and hospitals will not be identifiable.

Yours sincerely,

Marcio Augusto Goncalves
PhD Candidate

Appendix H

Letter to the manager in Great Britain[1]

[1] A translated letter was sent to Brazilian managers.

ASTON
BUSINESS SCHOOL

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XXX
XXX
XXX NHS TRUST
XXX
XXX

30 October 2000

Dear <name>;

RESEARCH: THE USE OF COST INFORMATION FOR PLANNING AND CONTROL

I am a Brazilian Phd student conducting comparative research at Aston Business School. My research is focused on the issue of how hospital managers formulate strategies to arrive at decisions and solve problems in planning and control.

I do understand that you are very busy but in order for the research community to develop tools and methodology which one day may help to ease your burden, it is necessary that we improve our understanding of how leading decision-makers like yourself approach the process.

I have discussed my project with Dr. Rupert Davies at the NHS Executive – West Midlands and he has suggested that your Trust may be a suitable organisation on which to base some of my research. My study includes interviews of middle managers in a cross-section of hospitals and I consider Birmingham Heartlands to be an ideal representative of the "cost-efficient" sector as shown by its position in the National Reference Cost Index.

As a Brazilian I am aware that the hospital system in Brazil is lagging some years behind the UK. Your input will be important in accelerating the development of decision support systems for the Brazilian Health System and to improve understanding of the process in the UK. I thank you very much in anticipation of your response.

I shall be telephone your secretary in the next few days to arrange an appointment at your convenience. The interview will be brief, around 40 minutes. I assure you that all information obtained will be considered confidential and will be published only in summary form in such a way that individual manager and hospital will not be identifiable.

Yours sincerely,

Marcio Augusto Goncalves
PhD Candidate

Appendix I

Complementary Statistics

Table 1 - Descriptive and comparative analysis – Great Britain and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
6	GB	1,5	4,0	2,5	2,7	0,5
	Brazil	1,0	5,0	3,0	2,8	0,6
6a	GB	1,0	4,0	2,0	2,5	0,7
	Brazil	1,0	5,0	3,0	2,7	0,8
6b	GB	1,0	4,0	3,0	2,8	0,8
	Brazil	1,0	5,0	3,0	3,0	0,9
7	GB	1,0	5,0	3,0	2,9	0,8
	Brazil	1,0	5,0	3,5	3,4	1,1
7a	GB	1,0	5,0	3,0	2,8	1,0
	Brazil	1,0	5,0	3,0	3,4	1,3
7b	GB	1,0	5,0	3,0	3,1	1,0
	Brazil	1,0	5,0	4,0	3,4	1,2
8	GB	1,5	5,0	3,4	3,3	0,7
	Brazil	1,0	5,0	3,2	3,3	0,9
8a	GB	1,0	5,0	3,0	2,7	1,1
	Brazil	1,0	5,0	3,0	3,2	1,3

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
8b	GB	1,0	5,0	3,0	3,3	1,1
	Brazil	1,0	5,0	4,0	3,7	1,4
8c	GB	1,0	5,0	3,5	3,4	1,1
	Brazil	1,0	5,0	2,0	2,4	1,5
8d	GB	1,0	5,0	4,0	4,0	1,1
	Brazil	1,0	5,0	4,0	3,7	1,3
10	GB	1,0	5,0	2,5	2,7	1,2
	Brazil	1,0	4,5	3,0	2,9	0,7
10a	GB	1,0	5,0	1,0	2,2	1,5
	Brazil	1,0	5,0	2,0	2,1	1,2
10b	GB	1,0	5,0	2,0	2,5	1,3
	Brazil	1,0	5,0	3,0	2,8	0,8
10c	GB	1,0	5,0	2,5	2,8	1,4
	Brazil	1,0	5,0	3,0	2,8	0,9
10d	GB	1,0	5,0	3,0	3,4	1,5
	Brazil	1,0	5,0	4,0	3,8	1,3

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
12	GB	1,9	5,0	3,0	3,1	0,7
	Brazil	1,0	5,0	3,3	3,2	1,0
12a	GB	1,0	5,0	3,0	3,0	0,8
	Brazil	1,0	5,0	3,0	3,0	1,2
12b	GB	2,0	5,0	3,0	3,4	0,8
	Brazil	1,0	5,0	3,5	3,4	1,2
12c	GB	1,0	5,0	3,0	3,1	1,0
	Brazil	1,0	5,0	3,0	3,2	1,2
12d	GB	1,0	5,0	3,0	3,1	1,0
	Brazil	1,0	5,0	3,0	3,2	1,2
12e	GB	1,0	5,0	3,0	3,4	1,0
	Brazil	1,0	5,0	4,0	3,5	1,2
12f	GB	1,0	5,0	3,0	2,9	1,1
	Brazil	1,0	5,0	3,0	3,1	1,2
12g	GB	1,0	5,0	3,0	3,0	1,0
	Brazil	1,0	5,0	3,0	3,0	1,1

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
13	GB	2,0	5,0	4,0	4,0	1,0
	Brazil	1,0	5,0	4,0	3,4	1,4
14	GB	1,5	5,0	4,0	3,9	0,7
	Brazil	2,0	5,0	5,0	4,8	0,5
14a	GB	1,0	5,0	4,0	3,8	1,0
	Brazil	2,0	5,0	5,0	4,7	0,7
14b	GB	1,0	5,0	4,0	3,9	0,9
	Brazil	2,0	5,0	5,0	4,7	0,7
14c	GB	2,0	5,0	4,0	4,0	0,9
	Brazil	2,0	5,0	5,0	4,8	0,6
14d	GB	1,0	5,0	4,0	4,0	0,9
	Brazil	2,0	5,0	5,0	4,9	0,4
15	GB	1,0	5,0	3,8	3,6	0,9
	Brazil	2,0	5,0	5,0	4,6	0,6
15a	GB	1,0	5,0	4,0	3,8	1,0
	Brazil	1,0	5,0	5,0	4,6	0,8

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
15b	GB	1,0	5,0	4,0	3,7	1,1
	Brazil	2,0	5,0	5,0	4,7	0,6
15c	GB	1,0	5,0	4,0	3,5	1,1
	Brazil	1,0	5,0	5,0	4,3	1,0
15d	GB	1,0	5,0	3,0	3,9	1,0
	Brazil	2,0	5,0	5,0	4,7	0,6
15e	GB	1,0	5,0	3,3	3,2	1,1
	Brazil	2,0	5,0	5,0	4,5	0,8
16	GB	1,7	5,0	4,0	3,4	0,7
	Brazil	1,7	5,0	5,0	4,5	0,8
16a	GB	2,0	5,0	3,0	3,8	0,9
	Brazil	1,0	5,0	5,0	4,6	0,8
16b	GB	1,0	5,0	3,0	3,1	1,1
	Brazil	1,0	5,0	5,0	4,5	1,0
16c	GB	1,0	5,0	3,3	3,2	1,0
	Brazil	1,0	5,0	5,0	4,6	0,8

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
17	GB	1,0	5,0	4,0	3,3	1,0
	Brazil	1,0	5,0	5,0	4,4	0,9
17a	GB	1,0	5,0	3,0	3,6	1,1
	Brazil	1,0	5,0	5,0	4,4	0,9
17b	GB	1,0	5,0	3,0	3,1	1,2
	Brazil	1,0	5,0	5,0	4,4	0,9
17c	GB	1,0	5,0	3,0	3,1	1,1
	Brazil	1,0	5,0	5,0	4,4	0,9
18	GB	1,0	5,0	3,0	3,1	1,0
	Brazil	1,0	5,0	5,0	4,2	1,1
20	GB	2,0	5,0	4,0	4,0	0,8
	Brazil	1,0	5,0	5,0	4,7	0,6
21	GB	1,8	4,6	3,0	3,0	0,6
	Brazil	1,8	5,0	3,0	3,1	0,6
21a	GB	1,0	5,0	4,0	3,7	1,1
	Brazil	1,0	5,0	3,0	2,6	1,4

Table 1 - Descriptive and comparative analysis - GB and Brazil
Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
21b	GB	1,0	5,0	3,0	3,0	1,1
	Brazil	1,0	5,0	4,0	3,8	1,1
21c	GB	1,0	5,0	3,0	3,3	1,0
	Brazil	1,0	5,0	4,0	3,7	1,1
21d	GB	1,0	5,0	3,0	2,6	1,2
	Brazil	1,0	5,0	3,0	3,2	1,4
21e	GB	1,0	5,0	2,0	2,4	1,2
	Brazil	1,0	5,0	1,5	2,1	1,4
22	GB	1,0	5,0	3,0	3,3	0,8
	Brazil	1,0	5,0	3,0	2,8	0,8
23	GB	1,0	5,0	4,0	3,7	1,1
	Brazil	1,0	5,0	5,0	4,5	0,7
23a	GB	1,0	5,0	4,0	3,9	1,1
	Brazil	1,0	5,0	5,0	4,6	0,7
23b	GB	1,0	5,0	4,0	3,7	1,3
	Brazil	1,0	5,0	5,0	4,5	0,9

Table 1 - Descriptive and comparative analysis - GB and Brazil
Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
23c	GB	1,0	5,0	4,0	3,6	1,3
	Brazil	1,0	5,0	5,0	4,5	0,8
24	GB	1,7	5,0	3,7	3,5	0,8
	Brazil	1,0	5,0	4,0	3,8	0,9
24a	GB	1,0	5,0	4,0	3,5	1,0
	Brazil	1,0	5,0	4,0	3,7	1,1
24b	GB	1,0	5,0	4,0	3,6	0,9
	Brazil	1,0	5,0	4,0	3,9	1,1
24c	GB	2,0	5,0	4,0	3,5	0,9
	Brazil	1,0	5,0	4,0	3,8	1,1
25	GB	1,0	5,0	3,3	3,2	0,9
	Brazil	1,0	5,0	3,7	3,6	1,0
25a	GB	1,0	5,0	4,0	3,4	1,1
	Brazil	1,0	5,0	4,0	3,9	1,2
25b	GB	1,0	5,0	3,0	2,9	1,1
	Brazil	1,0	5,0	3,0	3,1	1,2

Table 1 - Descriptive and comparative analysis - GB and Brazil
Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
25c	GB	2,0	5,0	3,5	3,4	1,0
	Brazil	1,0	5,0	4,0	3,7	1,3
26	GB	1,5	5,0	3,7	3,6	0,8
	Brazil	1,0	5,0	4,2	4,2	0,9
26a	GB	1,0	5,0	3,0	3,3	1,1
	Brazil	1,0	5,0	4,0	4,1	1,1
26b	GB	1,0	5,0	4,0	3,9	0,9
	Brazil	1,0	5,0	5,0	4,2	1,0
26c	GB	1,0	5,0	4,4	3,5	1,0
	Brazil	1,0	5,0	4,4	4,1	1,0
26d	GB	2,0	5,0	4,0	3,9	0,9
	Brazil	1,0	5,0	4,0	4,2	0,9
27	GB	1,0	5,0	3,0	3,0	0,9
	Brazil	1,0	5,0	3,5	3,5	1,1
27a	GB	1,0	5,0	2,9	2,9	1,2
	Brazil	1,0	5,0	3,6	3,7	1,4

Table 1 - Descriptive and comparative analysis - GB and Brazil Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
27b	GB	1,0	5,0	3,1	3,1	1,2
	Brazil	1,0	5,0	3,4	3,4	1,3
27c	GB	1,0	5,0	3,0	3,0	1,0
	Brazil	1,0	5,0	3,5	3,5	1,3
28	GB	1,0	5,0	2,7	2,7	1,2
	Brazil	1,0	5,0	3,5	3,5	1,3
29	GB	1,7	5,0	3,8	3,8	0,8
	Brazil	1,0	5,0	4,5	4,5	0,8
29a	GB	2,0	5,0	3,9	3,9	0,9
	Brazil	1,0	5,0	4,6	4,6	0,8
29b	GB	1,0	5,0	3,6	3,6	1,1
	Brazil	1,0	5,0	4,4	4,4	0,9
29c	GB	1,0	5,0	3,7	3,7	1,0
	Brazil	1,0	5,0	4,5	4,5	0,9
30	GB	1,7	5,0	3,7	3,7	0,8
	Brazil	1,0	5,0	3,7	3,7	1,0

Table 1 - Descriptive and comparative analysis - GB and Brazil
Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
30a	GB	1,0	5,0	3,7	3,7	1,0
	Brazil	1,0	5,0	3,8	3,8	1,2
30b	GB	1,0	5,0	3,8	3,8	0,9
	Brazil	1,0	5,0	3,8	3,8	1,1
30c	GB	1,0	5,0	3,6	3,6	1,0
	Brazil	1,0	5,0	3,6	3,6	1,2
31	GB	2,4	5,0	4,0	4,0	0,5
	Brazil	2,0	5,0	3,9	3,9	0,7
31a	GB	1,0	5,0	4,0	4,0	1,0
	Brazil	1,0	5,0	3,6	3,6	1,1
31b	GB	2,0	5,0	4,3	4,3	0,9
	Brazil	1,0	5,0	4,0	3,9	1,0
31c	GB	1,0	5,0	3,7	3,7	1,0
	Brazil	1,0	5,0	4,1	4,1	0,9
31d	GB	2,0	5,0	4,0	4,0	0,8
	Brazil	2,0	5,0	4,3	4,3	0,8

Table 1 - Descriptive and comparative analysis - GB and Brazil
Relatively to the studied dimensions/constructs

QUESTIONS OF QUESTIONNAIRE	Country	Descriptive statistics				
		Min.	Max.	Mdn	Mean	s.d.
31e	GB	1,0	5,0	4,2	4,2	0,8
	Brazil	1,0	5,0	3,7	3,7	1,3

Not: *s.d.* → standard deviation

Table 2 – Study of the Scale Reliability detailed by item, observation or variable – Great Britain

Q8. How do you classify the exercise of your function as...	Item-total correlation	Alpha value if the item is deleted
Q8a. Entrepreneur	0.3242	0.4789
Q8b. Disturbance handler	0.2447	0.5444
Q8c. Resource allocator	0.2182	0.5635
Q8d. Negotiator	0.5723	0.2613
Q8. Cronbach's Alpha = 0.5450		
Q10. How do you access information about costs and resource (...) ?	Item-total correlation	Alpha value if the item is deleted
Q10a. By computer	0.6560	0.8594
Q10b. Reports	0.7346	0.8281
Q10c. Meetings	0.8247	0.7880
Q10d. Talking to people	0.6798	0.8478
Q10. Cronbach's Alpha = 0.8679		
Q12. Characterise the costs information (you have access), considering your managerial function, in terms of its:	Item-total correlation	Alpha value if the item is deleted
Q12a. Reliability	0.6230	0.8679
Q12b. Relevance	0.6358	0.8666
Q12c. Clarity	0.7557	0.8504
Q12d. Simplicity to Consult	0.6872	0.8593
Q12e. Easily to understand	0.6681	0.8618
Q12f. Volume (amount of information)	0.6442	0.8659
Q12g. Precision	0.6580	0.8635
Q12. Cronbach's Alpha = 0.8796		
Q14. Do you think the cost information is useful for:	Item-total correlation	Alpha value if the item is deleted
Q14a. Surveillance	0.3956	0.7903
Q14b. Prediction	0.6674	0.6384
Q14c. Control	0.5382	0.7096
Q14d. Planning	0.6426	0.6513
Q14. Cronbach's Alpha = 0.7574		
Q15. Do you agree that the cost information (and/or the budget) facilitates	Item-total correlation	Alpha value if the item is deleted
Q15a. Adequate decisions	0.8576	0.8290
Q15b. Adequate planning	0.8275	0.8319
Q15c. Problem solving	0.7134	0.8608
Q15d. Resource control	0.6502	0.8740
Q15e. Uncertainty reduction	0.5786	0.8918
Q15. Cronbach's Alpha = 0.8836		

Table 2 – Study of the Scale Reliability detailed by item, observation or variable – Great Britain

Q16. How do you consider the usefulness of the cost information (and/or the budget) for control/surveillance:	Item-total correlation	Alpha value if the item is deleted
Q16a. On resource consuming	0.3383	0.5765
Q16b. On clinical activity	0.5140	0.2988
Q16c. On administrative activity	0.3626	0.5448
Q16. Cronbach's Alpha = 0.5917		
Q17. How do you consider the usefulness of cost information (and/or the budget) for benchmarking of:	Item-total correlation	Alpha value if the item is deleted
Q17a. Resource consuming	0.6861	0.7447
Q17b. Clinical activity	0.7109	0.7186
Q17c. Administrative activity	0.6353	0.7936
Q17. Cronbach's Alpha = 0.8214		
Q21. When you are facing a situation in the decision-making/problem solving process you consider critical, do you:	Item-total correlation	Alpha value if the item is deleted
Q21a. Decide/solve it anyway and communicate …	0.0889	0.4826
Q21b. Look for advice from superiors	0.1073	0.3408
Q21c. Look for advice from subordinates	0.2267	0.2494
Q21d. Consult Manuals/Guidelines	0.4136	0.0291
Q21e. Consult Computer systems	0.2158	0.2463
Q21. Cronbach's Alpha = 0.3412		
Q23. How do you consider the cost information (and/or the budget) as an element for managerial control in terms of:	Item-total correlation	Alpha value if the item is deleted
Q23a. Supplies/Consumables	0.6931	0.7994
Q23b. Human Resources	0.7137	0.7765
Q23c. Equipment	0.7253	0.7655
Q23. Cronbach's Alpha = 0.8428		
Q24. When you have a managerial problem/decision, do you know all the steps/procedures to solve it? In case of control:	Item-total correlation	Alpha value if the item is deleted
Q24a. Supplies/Consumables	0.6266	0.7002
Q24b. Human Resources	0.6344	0.6912
Q24c. Equipment	0.6025	0.7256
Q24. Cronbach's Alpha = 0.7827		
Q25. Do you act to control/monitor the consumed materials:	Item-total correlation	Alpha value if the item is deleted
Q25a. Studying the causes	0.7302	0.6901
Q25b. Changing the predictive (anticipation …	0.6034	0.8185
Q25c. Studying the process	0.6908	0.7346
Q25. Cronbach's Alpha = 0.8191		

Table 2 – Study of the Scale Reliability detailed by item, observation or variable – Great Britain

Q26. When you are controlling and you find a problem, do you review:	Item-total correlation	Alpha value if the item is deleted
Q26a. The characteristics of the material	0.6188	0.8367
Q26b. The characteristics of the professional	0.7211	0.7860
Q26c. The characteristics of the equipment	0.6844	0.7982
Q26d. The characteristics of activity	0.7160	0.7865
Q26. Cronbach's Alpha = 0.8430		
Q27. Do you consider that the control mechanisms to be capable of responding quickly in case of:	Item-total correlation	Alpha value if the item is deleted
Q27a. Supplies/Consumables	0.5705	0.6936
Q27b. Human Resources	0.5588	0.7072
Q27c. Equipment	0.6364	0.6252
Q27. Cronbach's Alpha = 0.7565		
Q29. How do you consider the cost information (and/or the budget) as an element for managerial planning in terms of:	Item-total correlation	Alpha value if the item is deleted
Q29a. Supplies/Consumable	0.5373	0.7787
Q29b. Human Resources	0.6572	0.6516
Q29c. Equipment	0.6621	0.6434
Q29. Cronbach's Alpha = 0.7771		
Q30. When you face a managerial problem/decision, do you know the steps/procedures to solve it? In case of planning:	Item-total correlation	Alpha value if the item is deleted
Q30a. Supplies/Consumables	0.6347	0.6865
Q30b. Human Resources	0.5688	0.7572
Q30c. Equipment	0.6621	0.6568
Q30. Cronbach's Alpha = 0.7812		
Q31. When you are planning, please characterise the influencing capacity of:	Item-total correlation	Alpha value if the item is deleted
Q31a. Your background	0.1241	0.5289
Q31b. Organisational Objective	0.3749	0.3612
Q31c. Objective of the Public	0.3751	0.3319
Q31d. Objective of the area/sector	0.3850	0.3474
Q31e. Clinical Objective	0.1000	0.5218
Q31. Cronbach's Alpha = 0.4802		
Q32. In terms of managerial behaviour, would you say that in this hospital:	Item-total correlation	Alpha value if the item is deleted
Q32a. Planning is a clinicians' task	0.2627	0.5509
Q32b. Planning is an administrators' task	0.4505	0.4703
Q32c. Control is a clinicians' task	0.3439	0.5184
Q32d. Control is an administrators' task	0.3046	0.5347
Q32e. Planning is a sector/area's task	0.2773	0.5497
Q32f. Control is a sector/area's task	0.2693	0.5553
Q32. Cronbach's Alpha = 0.5755		

Table 2 – Study of the Scale Reliability detailed by item, observation or variable – Great Britain

Q33. When hospital managers are planning or controlling, do you agree that:	Item-total correlation	Alpha value if the item is deleted
Q33a. Individuals pursue similar goals	0.6376	0.7150
Q33b. Clinicians pursue similar goals	0.5752	0.7371
Q33c. Administrators pursue similar goal	0.5415	0.7470
Q33d. Clinicians and administrators pursue …	0.6248	0.7192
Q33e. The hospital's goals are known and …	0.4162	0.7841
Q33. Cronbach's Alpha = 0.7823		
Q34. Do you agree that the use of cost information in control and planning within hospital can provide:	Item-total correlation	Alpha value if the item is deleted
Q34a. A Benchmarking of Clinical activities	0.5503	0.8241
Q34b. Clinical activity progress	0.6115	0.8148
Q34c. Improve clinical treatments	0.6871	0.8019
Q34d. Reduce resource consuming	0.6567	0.8097
Q34e. Cost cutting	0.4121	0.8416
Q34f. Training clinic professionals	0.6650	0.8060
Q34g. Training administrative Profession	0.5681	0.8215
Q34. Cronbach's Alpha = 0.8397		

Study of reliability - Brazil

Table 3 – Study of the Scale Reliability detailed by item, observation or variable – Brazil

Q8. How do you classify the exercise of your function as (...)	Item-total correlation	Alpha value if the item is deleted
Q8a. Entrepreneur	0.2031	0.4349
Q8b. Disturbance handler	0.1286	0.5037
Q8c. Resource allocator	0.3986	0.2219
Q8d. Negotiator	0.3177	0.3282
Q8. Cronbach's Alpha = 0.4546		
Q10. How do you access information about costs and resource (...) ?	Item-total correlation	Alpha value if the item is deleted
Q10a. By computer	0.4270	0.5335
Q10b. Reports	0.4742	0.5198
Q10c. Meetings	0.3446	0.5877
Q10d. Talking to people	0.4000	0.5550
Q10. Cronbach's Alpha = 0.6196		
Q12. Characterise the costs information (you have access), considering (...)	Item-total correlation	Alpha value if the item is deleted
Q12a. Reliability	0.7321	0.8908
Q12b. Relevance	0.5930	0.9060
Q12c. Clarity	0.8225	0.8807
Q12d. Simplicity to Consult	0.7380	0.8902
Q12e. Easily to understand	0.7301	0.8911
Q12f. Volume (amount of information)	0.7344	0.8906
Q12g. Precision	0.6924	0.8952
Q12. Cronbach's Alpha = 0.9062		
Q14. Do you think the cost information is useful for:	Item-total correlation	Alpha value if the item is deleted
Q14a. Surveillance	0.6703	0.7590
Q14b. Prediction	0.6509	0.7740
Q14c. Control	0.7502	0.7193
Q14d. Planning	0.5529	0.8199
Q14. Cronbach's Alpha = 0.8189		
Q15. Do you agree that the cost information (and/or the budget) facilitates	Item-total correlation	Alpha value if the item is deleted
Q15a. Adequate decisions	0.6282	0.8051
Q15b. Adequate planning	0.6936	0.7978
Q15c. Problem solving	0.7222	0.7864
Q15d. Resource control	0.6007	0.8168
Q15e. Uncertainty reduction	0.6366	0.8032
Q15. Cronbach's Alpha = 0.8357		

Table 3 – Study of the Scale Reliability detailed by item, observation or variable – Brazil

Q16. How do you consider the usefulness of the cost information (and/or the budget) for control/surveillance:	Item-total correlation	Alpha value if the item is deleted
Q16a. On resource consuming	0.6621	0.7508
Q16b. On clinical activity	0.7139	0.7007
Q16c. On administrative activity	0.6384	0.7727
Q16. Cronbach's Alpha = 0.8140		
Q17. How do you consider the usefulness of cost information (and/or the budget) for benchmarking of:	Item-total correlation	Alpha value if the item is deleted
Q17a. Resource consuming	0.8590	0.8890
Q17b. Clinical activity	0.8357	0.9075
Q17c. Administrative activity	0.8599	0.8882
Q17. Cronbach's Alpha = 0.9275		
Q21. When you are facing a situation in the decision-making/problem solving process you consider critical, do you:	Item-total correlation	Alpha value if the item is deleted
Q21a. Decide/solve it anyway and communicate …	0.2457	0.5470
Q21b. Look for advice from superiors	0.1560	0.1823
Q21c. Look for advice from subordinates	0.1692	0.1734
Q21d. Consult Manuals/Guidelines	0.3920	0.1274
Q21e. Consult Computer systems	0.2523	0.0671
Q21. Cronbach's Alpha = 0.2542		
Q23. How do you consider the cost information (and/or the budget) as an element for managerial control in terms of:	Item-total correlation	Alpha value if the item is deleted
Q23a. Supplies/Consumables	0.6429	0.8333
Q23b. Human Resources	0.6721	0.8113
Q23c. Equipment	0.8085	0.6663
Q23. Cronbach's Alpha = 0.8389		
Q24. When you have a managerial problem/decision, do you know all the steps/procedures to solve it? In case of control:	Item-total correlation	Alpha value if the item is deleted
Q24a. Supplies/Consumables	0.6390	0.7434
Q24b. Human Resources	0.5905	0.7914
Q24c. Equipment	0.7251	0.6498
Q24. Cronbach's Alpha = 0.8037		
Q25. Do you act to control/monitor the consumed materials:	Item-total correlation	Alpha value if the item is deleted
Q25a. Studying the causes	0.5578	0.7217
Q25b. Changing the predictive (anticipation …	0.5311	0.7521
Q25c. Studying the process	0.7023	0.5519
Q25. Cronbach's Alpha = 0.7629		

Table 3 – Study of the Scale Reliability detailed by item, observation or variable – Brazil

Q26. When you are controlling and you find a problem, do you review:	Item-total correlation	Alpha value if the item is deleted
Q26a. The characteristics of the material	0.7232	0.8642
Q26b. The characteristics of the professional	0.7965	0.8333
Q26c. The characteristics of the equipment	0.6712	0.8803
Q26d. The characteristics of activity	0.8167	0.8282
Q26. Cronbach's Alpha = 0.8846		
Q27. Do you consider that the control mechanisms to be capable of responding quickly in case of:	Item-total correlation	Alpha value if the item is deleted
Q27a. Supplies/Consumables	0.5921	0.8083
Q27b. Human Resources	0.6723	0.7245
Q27c. Equipment	0.7156	0.6814
Q27. Cronbach's Alpha = 0.8095		
Q29. How do you consider the cost information (and/or the budget) as an element for managerial planning in terms of:	Item-total correlation	Alpha value if the item is deleted
Q29a. Supplies/Consumable	0.8141	0.8944
Q29b. Human Resources	0.8095	0.8996
Q29c. Equipment	0.8752	0.8414
Q29. Cronbach's Alpha = 0.9160		
Q30. When you face a managerial problem/decision, do you know the steps/procedures to solve it? In case of planning:	Item-total correlation	Alpha value if the item is deleted
Q30a. Supplies/Consumables	0.6054	0.7367
Q30b. Human Resources	0.5883	0.7535
Q30c. Equipment	0.6953	0.6349
Q30. Cronbach's Alpha = 0.7876		
Q31. When you are planning, please characterise the influencing capacity of:	Item-total correlation	Alpha value if the item is deleted
Q31a. Your background	0.4529	0.7425
Q31b. Organisational Objective	0.7472	0.6313
Q31c. Objective of the Public	0.6206	0.6834
Q31d. Objective of the area/sector	0.4693	0.7365
Q31e. Clinical Objective	0.4193	0.7661
Q31. Cronbach's Alpha = 0.7574		
Q32. In terms of managerial behaviour, would you say that in this hospital:	Item-total correlation	Alpha value if the item is deleted
Q32a. Planning is a clinicians' task	0.4160	0.6979
Q32b. Planning is an administrators' task	0.6097	0.6423
Q32c. Control is a clinicians' task	0.5249	0.6650
Q32d. Control is an administrators' task	0.5997	0.6465
Q32e. Planning is a sector/area's task	0.3146	0.7304
Q32f. Control is a sector/area's task	0.3319	0.7242
Q32. Cronbach's Alpha = 0.7237		

Table 3 – Study of the Scale Reliability detailed by item, observation or variable – Brazil

Q33. When hospital managers are planning or controlling, do you agree that:	Item-total correlation	Alpha value if the item is deleted
Q33a. Individuals pursue similar goals	0.6884	0.8420
Q33b. Clinicians pursue similar goals	0.6573	0.8494
Q33c. Administrators pursue similar goal	0.7929	0.8166
Q33d. Clinicians and administrators pursue …	0.7177	0.8347
Q33e. The hospital's goals are known and …	0.6114	0.8601
Q33. Cronbach's Alpha = 0.8686		
Q34. Do you agree that the use of cost information in control and planning within hospital can provide:	Item-total correlation	Alpha value if the item is deleted
Q34a. A Benchmarking of Clinical activities	0.7758	0.8947
Q34b. Clinical activity progress	0.8065	0.8913
Q34c. Improve clinical treatments	0.8272	0.8890
Q34d. Reduce resource consuming	0.6949	0.9040
Q34e. Cost cutting	0.6652	0.9066
Q34f. Training clinic professionals	0.7156	0.9015
Q34g. Training administrative Profession	0.6603	0.9069
Q34. Cronbach's Alpha = 0.9125		

Study of reliability Great Britain and Brazil - Summary

Table 4 – Values of Scale Reliability summarized by question

Scale	Cronbach's Alpha	
	GB	Brazil
Q8. How do you classify the exercise of your function as ...	0.5450	0.4546
Q10. How do you access it information ...	0.8679	0.6196
Q12. Characterize the cost information (you have access) ...	0.8796	0.9062
Q14. Do you think the cost information is useful for ...	0.7574	0.8189
Q15. Do you agree that the cost information (and/or the budget) facilitates ...	0.8836	0.8357
Q16. How do you consider the usefulness of the cost information ...	0.5917	0.8140
Q17. How do you consider the usefulness of cost information for benchmarking ...	0.8214	0.9275
Q21. When you are facing a situation in the decision-making/problem solving ...	0.3412	0.2542
Q23. How do you consider the cost information (and/or the budget) ... control ...	0.8428	0.8389
Q24. When you have a managerial problem/decision, do you know all ... control ...	0.7827	0.8037
Q25. Do you act to control/monitor the consumed materials ...	0.8191	0.7629
Q26. When you are controlling and you find a problem, do you review ...	0.8430	0.8846
Q27. Do you consider that the control mechanism are capable of responding ...	0.7565	0.8095
Q29. How do you consider the cost information (and/or the budget) ... planning ...	0.7771	0.9160
Q30. When you face a managerial problem/decision, do you know all ... planning ...	0.7812	0.7876
Q31. When you are planning, please characterize the influencing capacity of ...	0.4802	0.7574
Q32. In terms of managerial behavior, would you say that in this hospital ...	0.5755	0.7237
Q33. When hospital managers are planning or controlling, do you agree that ...	0.7823	0.8686
Q34. Do you agree that the use of cost information in control and planning ...	0.8397	0.9125

Table 7.3 shows that only 5 sub-scales can be considered that have not presented the minimum grade of Cronbach's Alpha, i.e., 0.60 (Malhotra, 1996). All the others showed reliability that authorizes the use of them in future analysis.

Appendix J

Research methodology - complementary discussion

5.2 Phase 1 - quantitative

This Appendix provides the necessary theoretical and complementary support to certain parts of the Chapter 5 – Research Methodology. This Appendix presents only the sections with other complementary points.

5.2.1 Preliminary approach in Great Britain and Brazil, other complementary points.

The work was realised first in Brazil. In January/February 2000, the researcher conducted the focus groups exercise and a preliminary test survey in Brazil. Focus groups are defined as being a small number of individuals that are brought together in a room to 'sit and talk' about the topic of interest to the focus group sponsor. A moderator directs the discussion. In this case the researcher acted as moderator as well. This exercise involved two focus groups of six managers each from two different hospitals.

The preliminary survey was conducted with three people from different hospital costing groups and a financial manager. Questions were set in general terms, to define the boundaries of the scenario. At the same time the prospective abilities of future respondents regarding the issues related to the preliminary hypothesis were investigated.

In March/April 2000 a preliminary survey exercise was conducted in Great Britain. Managers from different hospital areas and from the NHS structure were included in this exercise. Semi-structured interviews were done. Questions firstly were formulated in terms of "How do you explain..." or "In your opinion ..." and then they were asked to explore in detail some of the rationales. The intention was posed on "developing tentative explanation" and not on "demonstrating the viability of a given explanation" (Churchill, 1995).

General views and insights were sought in both countries when using interviews in their open-ended form. However, it must be said that, some consistency was ensured to facilitate future analysis.

Five interviews in Great Britain were conducted involving one member of the regional office of the NHS Executive, one head of finance department, one manager of facilities and two retired nurses, which were former heads of department.

5.3.1 Cross-sectional sample survey study, other complementary points.

The cross sectional study, firstly, provides a snapshot of the dimensions or constructs of interest in a single point of time. Secondly, the sample is typically selected to represent the known universe, providing generalization. As shown ahead, probabilistic sample was used. The probability sample allows the determination of the sampling error, which, when associated with the statistics measurement, permits generalization to the whole population.

The sample survey has some disadvantages. The most common criticism is that it does not penetrate very deeply below the surface, since breadth is emphasized at the expense of depth, as discussed before. Other criticism is based on the evidence that this kind of study works with statistics that efficiently summarizes the wide variety of data collected. It means that the process of generating summary statistics to describe the phenomenon generally apply to the average of objects researched forgetting the individual. Thirdly, survey is expensive in terms of time and money. It takes a long journey before starting analysing outputs of a survey research. And fourthly, survey research will demand a reasonable level of statistics skills (Churchill, 1995).

Seeking to mitigate the first and second criticisms, the researcher interviewed individual managers in both countries to provide in-depth analysis. The third observation was superseded by a thoroughly surveillance of the limits of the available time and budget. The last criticism conducted the researcher to books and to get advises from experienced academics during the statistical process.

5.3.2.1 Data collection – the primary data, other complementary points.

As posed by Churchill (1995) and Pasquali (1999) there are some types of primary data generally obtained. One can cite for example the demographic and/or socioeconomic,

psychological and/or life-style, attitude and/or opinions, intentions, motivation, behaviour, and awareness and/or knowledge characteristics of a given population. This research is interested on attitudes and/or opinions, meaning perceptions, as the main type of primary data collection. This does not discharge the observation of some characteristic better related to any of the other types. Churchill (1995, p.339) set out that

> "some authors distinguish between attitudes and opinions, but others use the terms interchangeably. Most typically, attitude is used to refer to an individual's 'preference, inclination, views or feelings toward some phenomenon', whereas opinions are 'verbal expression or attitudes.'"

Both terms will be used interchangeably in this research as well. Churchill (1995) stated that attitude is a very important notion because it is generally accepted that attitudes are related to behaviour. In summary, attitudes can be considered related to, and are the product of, an individual's environment, as seen in a preceding chapter of this thesis.

5.3.2.2 Obtaining primary data, other complementary points.

There are several forms of collecting primary data, see Figure 5.2. However, the first choice to be done is about the mode, whether it is communication or observation.

Figure 5.2 – Modes for collecting primary data

Communication	Degree of structure	. Structured . Semi structured . Unstructured
	Degree of disguise	. Disguised . Undisguised
	Method of administration	. Personal interview . Telephone interview . Mail questionnaire
Observation	Degree of structure	. Structured . Semi structured . Unstructured
	Degree of disguise	. Disguised . Undisguised
	Setting	. Natural . Contrived
	Method of administration	. Human . Mechanical

Source: Adapted from Churchill, 1995.

This research applied the communication mode. This mode is able to provide the necessary answer to the questions posed and stated hypotheses. It was adopted in both Phase 1 and

Phase 3 of this research. Wide scope, speed and cost advantages of the communication mode are superior to the observation mode (Churchill, 1995, Aaker et al., 1998; Pasquali, 1999).

Churchill (1995, p. 352) posed that "the reliability of fixed alternative questions is sometimes associated with loss of validity, as the answers may not accurately reflect the true state of affairs". It can happen when the question force an opinion when the subject of the research does not have one. It may also be possible that the respondent has an answer but it is not accurately available as one of the alternatives.

Fixed response can also reduce validity when the response themselves cause bias. Churchill (1995, p. 354) set out that "this is particularly acute when an appropriate response is omitted and because of an oversight or when insufficient prior research indicates that the response categories are appropriate". The tendency to solve this problem is the introduction of the "other" category. Nonetheless, it causes another problem because there is a tendency of subjects in marking this category.

Seeking to eliminate or reduce as much as possible above mentioned frailties, the researcher carried out the preliminary research in both countries, as explained before. These problems could be eliminated or, at least, minimised due to pre-test and pilot exercises undertaken in both countries before administering the main survey as well. Pre-test and pilot exercises were explained already in this thesis.

The use of the structured, undisguised questionnaire is also defended because of the fixed-alternative question. The questionnaire is therefore most productive when possible replies are "well known, limited in number, and clear-cut. Thus they are appropriate for securing factual information and for eliciting expressions of opinion about issues on which people hold clear opinions" (Churchill, 1995, p. 352)

The method of administration chosen was the mail questionnaire, see Figure 5.2. Basically, it consists in mailing the questionnaires to designated respondents with a covering letter. The respondents complete the questionnaire and mailed it back to the researcher (Churchill, 1995; Aaker et al., 1998).

5.3.2.3 Data collection forms, other complementary points.

This part of the thesis will present both instruments used in the research. Firstly will be showed the process used to develop the questionnaire for the quantitative approach. Afterwards, it will be presented the process used to develop the personal interview for the qualitative approach.

5.3.2.3.1 The questionnaire design, other complementary points.

In terms of procedures for developing a questionnaire, Churchill (1995) proposed nine steps, which were followed to obtain an instrument ready to be piloted (see figure 5.4). The literature involving survey and questionnaires is vast (Galtung, 1967; Belson, 1981; Converse and Presser, 1986; Aaker et al., 1998; Fowler, 1993; Fink, 1995, 1998; Nachmias and Nachmias, 1996; Tull and Hawkins, 1993). However, the general ideas always prevail. These steps are independent but, though sequential, the process imposes sometimes the return to anterior steps and a restart.

Figure 5.4 – Procedure of developing a questionnaire

1	Specify what information will be sought
2	Determine type of questionnaire and method of administration
3	Determine content of individual questions
4	Determine form of response to each question
5	Determine wording of each question
6	Determine sequence of questions
7	Determine physical characteristics of questionnaire
8	Re-examine steps 1-7 and revise if necessary
9	Pre-test questionnaire and revise if necessary

Source: adapted from Churchill, 1995.

The questionnaire was applied in both countries. Nevertheless, the Brazilian version had to go through a process due to the cross-national nature of this research. This will be explained ahead in this chapter.

The questions were stated following general admonitions from several authors. Fowler (1998) posed five basic characteristics to ask questions seeking to obtain valid and accurate answers: a) the question must to be consistently comprehended; b) the question must to be consistently communicated; c) expectation about adequate answer must to be clear to the respondent; d) respondents must have all necessary information; and e) respondents must to

be encouraged to answer. Sudman e Bradburn, 1982 set out three general rules to write down questions: control the impulse of writing down questions until complete understanding of the what is sought; take notes of the research questions, hypotheses and objectives and keep them close when developing the questionnaire; and c) for every question written down ask why it is necessary to know that. Schuman and Presser (1981) have discussed about bias and emphasis. These authors discussed closed and open-ended questions. Other authors also discus about the theme (Gunter and Lopes, 1990; Churchill, 1995; Aaker et al., 1998; Pasquali, 1999).

5.3.2.3.2 Form of response, other complementary points.

It was rejected the open-ended form of response because of its higher costs and longer time both to collect and interpret it meaningfully (Peterson, 1988). Only questions 2, 3 and 4 of the questionnaire could be considered open-ended. The question 2 asks how long the manager has worked in hospitals. It was later codified as exactly the amount of years posed by the respondent. Months were rounded to the nearest year.

The question 3 asked which area/sector/service the manager was in charge. It was codified into 1 for clinical or 2 for administrative area. Question 4 asked how long the manager had been in charge of the area/sector/service. The codification followed the same argument used by question 2. Despite questions 35a and 35b have presented the alternative 'Other', what can be considered an open-ended variation, they were not codified because they did not had significant answer.

Question 5 was used to certify that only middle managers would be considered as valid response. It was codified as being 1 for board director, 2 for Middle management (Head of department, deputy, other), and 3 for other. Only those questionnaires filled by middle managers were considered as valid to this research. Questions 35a and 35b respecting to the currently available cost information within hospitals was coded as: 1 when ticked (meaning available) and 2 when no ticked (meaning no available).

For all the other close-ended questions, a minimum level of interval scaling was elected as form of response. It was done in order to guarantee the applicability of more powerful

statistical tests (Lehmann et al., 1998). Scales employed in the questionnaire were obtained from literature and other thesis with a frequent use of a five-points Likert of summated ratings method scale (see, for example, Sinkula, 1990; Souchon, 1995; Stagg, 1999).

Scale response forms were considered ideal to this research because they are the most appropriate in measuring unobservable managerial dimensions or constructs (Burns and Bush, 1995). The dimensions or constructs of planning, control and use of cost information are not directly observable. They are latent variables that, influenced by behavioural patterns or judgments, are reflected in the responses.

There is a debate about the optimal number of scale points. It could be suggested that the more scales categories the more precise the responses will be. Nonetheless, it is accepted that respondents can get confused with large amount of categories to choose from (Aaker et al., 1998). Variability and reliability are desirable qualities of a measurement scale. If a scale fails to discriminate differences in certain attributes, due to the large number of points, probably its correlations with other measures will be restricted and its utility limited (DeVellis, 1991). The hypothesis that a positive relationship exists between reality and the number of the scale points over the normal range is supported (Churchill, 1995).

A review of literature about the optimal number of scale points showed that a single number of response alternative that may be appropriate for all studies does not exist (Cox, 1980; Souchon, 1995). Seven points scale have been defended as being a general optimal number of response alternatives. The scale's reliability and the acceptance of it as being interval scaling has been posed to increase with the number of scale points, however according to Lissitz and Green (1975) the increase in reliability stabilises after five scale points. These authors posed that the utility in developing over five scale points would generally be little.

Aaker et al., (1998) set out that after nine points the scale has not significant gains. Pasquali (1999) also posed that the number of points in the scale varies from three to over ten, being the most used those with five and seven points. The author also asserts that, besides the number of points used in Likert scales seems to be irrelevant.

Stagg (1999) and Souchon (1995) defended the use and they used five points Likert scales in their researches. Thus, this study adopted five points Likert scales and it showed to be cross-

national valid when submitted to a panel of academic experts of both countries. This increased confidence in conceptual, functional, translation and measure equivalence (Douglas and Craig, 1983). It will be discussed ahead.

5.3.2.3.3 Sequence of questions and physical characteristics, other complementary points.

The sequence of questions emerged from suggestions of the academic experts and researchers of both countries. They commented on the appropriateness of the questions in terms of number and sequence, wording and also, the instrument format. Following Churchill's (1995) recommendation it was started with simple questions and then funnelled, leaving more difficult questions to the end. This strategy was adopted seeking to gain and maintain the respondent's cooperation (Aaker et al., 1998).

Physical characteristics of questionnaires can interfere in how respondents react to it and how the replies can be processed (Churchill, 1995; Aaker et al., 1998). The questionnaire was made in an attractive yellow paper. It is known that the colour of questionnaires does not improve response rate (Miller, 1991). This author suggested that a questionnaire should present an aesthetically pleasing cover, an attractive page format, a title that would arouse interest, a size and style or type easily readable under poor illumination and for people with poor vision. These suggestions were kept in mind and the questionnaire had a booklet format with the size of an A4 paper folded reinforcing an image of quality. It was eight pages long in total. While one cannot assert conclusively that short questionnaire would improve response rate, it seems reasonable that a concise questionnaire would not decrease the response rate.

The colour yellow made the follow-up waves easier. The questionnaire became easily identifiable on the top of the manager's table, shortening the phone contact. Questions were numbered and items were not, thus, the number in the questionnaire suggested few questions.

The first page of the questionnaire was the covering letter. The covering letter that introduced the questionnaire is shown in the Appendix E. It tried to convince respondents about the importance of the research and the importance of their participation. Churchill (1995) proposed as typical contents of a covering letter: description of how they can benefit

in responding the questionnaire, assurance of confidentiality, and stating the incentive they will receive in participating. Also the name of the University and programme were posed to lend credibility to the study.

5.3.3 Questionnaire Pre-test, other complementary points.

The pre-test can be considered an important phase of the questionnaire development process (Churchill, 1995; Aaker et al., 1998; Pasquali, 1999). Testing the questions' meaning is also an important pre-testing purpose. Because of language is basically ambiguous and words can have different meanings to different people "it is important to ensure that the words used in survey questions have the same meaning to the respondent as the researcher intended them to have" (Reynolds and Diamantopoulos, 1998, p.1). Recent study developed by Reynolds and Diamantopoulos (1998), when empirically investigating the method, respondent knowledge and potential interaction on error detection during the pre-test, found out that "personal interviews resulting in a significantly higher error detection rate than the impersonal method of administration" (p. 6).

In terms of pre-testing methods, there are authors that recommend personal interviews (Aaker et al., 1998; Pasquali, 1999) because they are considered superior to impersonal survey methods in terms of accuracy and completeness of the information they generate (Miller, 1991). They also provide the possibility of error detection by observation. However, other authors put that if the main survey administration is to be impersonal (e.g. through a mail questionnaire) a pre-test considering personal interviews could not reflect the problems encountered by the respondents and, then, they suggest that the pre-test use the same method to be used to the main survey (Tull and Hawkins, 1993). Other authors recommend both personal interviews and survey mode in separate pre-tests (Churchil, 1995). This research involved both the pre-test conducting personal interviews and the pilot using mail questionnaires in Great Britain and Brazil.

5.3.3.2 Pre-testing the questionnaire in Brazil, other complementary points.

Before performing the pre-test, it was necessary to observe categories of equivalence for the instrument as summarised in the Figure 5.6.

Relatively to this part, should be presented the conceptual, functional and translation equivalences. Metric, sample and data collection equivalences are discussed in the sections where the subject is specifically explored.

Figure 5.6 – Categories of equivalence for cross-national research

Main categories	Sub-categories (if any)
Conceptual equivalence	---
Functional equivalence	---
Translation equivalence	• Lexical equivalence • Idiomatic equivalence • Grammatical-syntactical equivalence • Experiential equivalence
Metric equivalence	---
Sample equivalence	• Sampling unit equivalence • Sample representativeness • Category equivalence
Data collection equivalence	• Respondent cooperation equivalence • Contextual equivalence • Response style equivalence

Source: adapted from Berry, 1989; Douglas and Craig, 1997; Cadogan et al., 2001.

The conceptual equivalence is based on the interpretation that individuals place on objects, stimuli or behaviour (Berry, 1989). This research is related to middle managers of public hospitals and this interpretation exists and is expressed in similar ways in both countries. Conceptual equivalence requires that the dimensions or constructs and the measuring instruments have similar meaning across the social units studied. It was verified during the exploratory research that this equivalence exists between countries. The managerial dimensions or constructs studied in this research were considered adequately understood and the Likert scales as well.

Functional equivalence "exists when the behaviour in question has developed in response to a problem shared by two or more social/cultural groups, even though the behaviour in one society does not appear to be related to its counterpart in another society" (Berry, 1989, p. 726). There is functional equivalence between both groups. Both are middle managers of public hospitals influenced for environmental variables such as technology, increase in population and life expectation. Talking in terms of planning and control one can assert that this is not a particular problem or process of a specific country. Brazilian and British managers have experienced problems and issues involving the same managerial functions, i.e. planning and control.

To proceed with the translation was contracted a professional, teacher of English language in Brazil. He is originally a British citizen but has been living and teaching in Brazil for approximately 25 years. This makes out of him a professional translator what ensured translation equivalence. He is an employee of "Cultura Inglesa[1]". Then it was carried out back translation technique. After the translation, the researcher proceeded with a back translation, meaning, the version in Portuguese was translated to English again. The three versions, i.e. the original questionnaire, the translated questionnaire and the 'new' English version of the translated questionnaire were taken to a panel of specialists for considerations. These panel of specialists consisted of three academic researchers of the Federal University of Minas Gerais. Some corrections were made in terms of wording, such as the translation of the term "benchmarking" that has no similar in Portuguese. Thus the version in Portuguese could be pre-tested.

Unlike functional and conceptual equivalence, metric equivalence can only be checked after the data are analysed. However, metric equivalence was aided since lexical equivalents of the original English versions of the scale descriptions were readily available in Portuguese. Results should be investigated while simultaneously analysing and checking for the reliability measures of the rating scales (Cadogan et al., 2001). Thus measurement reliability tests for metric equivalence are going to be presented ahead in the research report chapter. Sample equivalence and data collection equivalence follow the same criteria. They will be explained in the parts of this thesis concerning to these topics.

The questionnaire was then pre-tested in the same way as it was in Great Britain, i.e. using protocol and debriefing with eight academics and hospital managers. The unique problem detected was "it seems daunting" and it was solved improving the design and appearance of the instrument.

[1] "Cultura Inglesa" means English Culture and it is the institution sole responsible for applying tests such as IELTS and Cambridge to students that apply to study in British schools and universities.

5.3.6 Sample size, other complementary points.

The sample size for this research was calculated. For the calculation of the sample size the following formula was presented in Churchill (1995, p. 631):

$$n = \frac{Z^2}{H^2} \cdot \sigma^2$$

Where:

n = sample size
H = half precision
σ = standard deviation

For the current study the values adopted were as follows:

Z = 1.96 (Confidence Interval of 95%)
H = 0.25, i.e., it is expected a mean within +/- 0.25 of the true population value.
σ = 1.41 (square root of the variance, considering the value 2 for the variance)

According to Table 5.6, we observe that the expected variance of a 5-point scale varies between 1.2 and 2.0. For the sample calculation was considered the maximum value so as to contemplate possible existing discrepancies between the researched countries.

Table 5.6 - Guidelines for estimating variance for data obtained using rating scales

Number of scale points	Typical range of variances
4	0.7 – 1.3
5	**1.2 – 2.0**
6	2.0 – 3.0
7	2.5 – 4.0
10	3.0 – 7.0

Source: Churchill (1995, p. 633)

Through the calculations, the approximate value of a minimum of 125 respondents was achieved. For reasons of response rate 20% more respondents were addressed, thus 150 questionnaires were applied.

5.4 Phase 3 - qualitative approach, other complementary points.

This research was also concerned with semi-structured and undisguised personal interview to fulfil Phase 3. The objective of the phase and the instrument was the gain of internal validity completing the questionnaire. As advocated before, it made the results even richer. The main intention was, to some extent, develop mechanisms of compensation, meaning that when and where the quantitative approach was weak, the qualitative approach would compensate or fill in the gap and vice-versa.

This is an exploratory/descriptive research type, and part of its aims is the hypotheses verification. Thus, the used methodology is mainly quantitative; however, a technique considered qualitative is also used, but as a supporting tool and for the work enrichment. Therefore, specific measures had to be developed for the purpose of this research. Phase 1, already described, showed the survey. In phase 3, interviews were preformed with several middle managers in two chosen hospitals in Great Britain and other two in Brazil and are going to be discussed in this section.

Therefore, this technique can refer to the use of different data collection methodologies. Jick (1979) conducted a study about anxiety and job insecurity during a merger that employed data from questionnaires, interviews, co-worker observations, and company records. In this research, semi-structured interviews were conducted in two hospitals with several managers seeking to clarify and amplify the results from phase 1 (see Cunningham et al., 2000). The use of this narrative analysis in accounting and other financial themes has been employed and advocated by Llwellyn (1994, 1999).

Concerning the means, the mentioned research also uses, together with the quantitative research and the qualitative analysis, the methodology of case study, to give more depth and details to the object of the research.

One of the applied data collection techniques was the interview. According to Lakatos and Marconi (1991), such technique is pertinent to the kind of the used research, as, according to the author, this kind of research work

> "(...) can utilize formal methods, that get closer to the experimental projects, characterized by the precision and statistic control, so as to provide data for hypotheses verification. All of them employ quantitative artifices aiming to the systematic collection of data about populations, programmes, or populations and programmes' samples. They utilise several techniques such as interviews, questionnaires, forms, etc, and employ sample procedures"(p.76).

Thus, there have been semi-structured interviews, and the analysis, content and utilisation of these will be employed for the hypotheses evaluation. There is a difference between the quantitative and the qualitative methodologies as, in general, statistic methods for the research data collection are not utilised in the qualitative methodology. So the quantitative method aims to measure homogeneous units or categories, whilst the qualitative method seeks a more particular analysis.

According to Lakatos and Marconi (1991), as there is not a clearly defined limit between these two methodologies, there is the possibility for the utilisation of both, as it is done in this research. In spite of this, it still keeps a highly quantitative character, using the qualitative methodology just as a descriptive support tool, as it may be confirmed not only by the wide utilisation of statistic methods, but also by the existence of hypotheses or questions put first, that corroborates, with such characteristics, the predominance of the quantitative research.

In some aspects, the quantitative method may be considered better than the qualitative one. The quantitative methodology, due to the utilisation of standardised tools, structured or semi-structured questionnaires and/or interviews, in general, as specific indicators, is the most reliable. On the other hand, the qualitative methodology presents problems concerning data identification and codification.

The quantitative method also obtains the results generalization concerning similar groups through the use of indicators and the cause-effect relation between items or variables. Whilst in the qualitative method, the measures are more imprecise, founded, in general, on participant observations, life history, content analysis; however, this methodology allows the obtainment of more detailed knowledge, which the structured tools (questionnaires) cannot obtain, providing more inductive data analysis process (Lakatos and Marconi, 1991).

Therefore, it is observed that the qualitative methodology assumes that the obtainment of data through the contact researcher-researched situation, and the data obtained by using such

methodology are descriptive, and aim to the facts, problems and phenomena illustration and enrichment (Lakatos and Marconi, 1991).

The interview may be defined as a meeting in which the interviewer, having started a conversation about the subject in which he/she is interested in, may attain the desired information (Gil, 1991). One of the advantages of the interview technique refers to the fact that it is applicable to a larger number of people. Besides, it may provide help to the interviewee who has difficulty to understanding and answer, and also allows the analysis of the interviewee's non-verbal behaviour. This questioning technique presents some limitation, such as: interviewee's disposition for giving information; obtainment of data from the interviewee's point of view; possibility of the interviewee being influenced by the interviewer (ibid). Interview is one of the most used techniques in the qualitative research.

Therefore, this research intends the combined use of the quantitative and qualitative methodologies, by using statistic methods, study methodology of cases and interview techniques. Aiming to attain the best possible benefit from data collected and, thus, more thorough analysis performance and results presentation.